VOLUME XXII NUMBER 4 APRIL, 1941

ARTICLES

AN ARCHITECT'S VIEW OF LOW-RENT HOUSING	*W. POPE BARNEY*	221
VACATION HOUSE	*GEORGE KOSMAK, ERNST PAYER*	230
ARMSTRONG SHOWROOMS	*DON E. HATCH*	241
CONTRA-VERSUS	*TALBOT F. HAMLIN*	253
BASEMENTS AND SAVINGS	*LLEWELLYN PRICE*	275
A CLASSIFICATION FOR DRAFTSMEN	*D. KNICKERBACKER BOYD*	278
MONTHLY WASHINGTON REPORT	*A. D. TAYLOR*	281
DEFENSE WORK AT YALE	*C. L. V. MEEKS*	285

PLATES

LONG ISLAND STUDIES	*TET BORSIG*	267
PALM SPRINGS HOUSE	*PAUL LASZLO*	237
DOGWOOD IN YOSEMITE	*ANSEL ADAMS*	262

THRESHING FLOOR

LETTERS AND DISCUSSIONS BY *GILBERT RAYMOND GOLDING, CARL F. SCHMIDT, B. H. WHINSTON, A. D. TAYLOR, CARLETON WINSLOW, JR., LYMAN ENNIS, R. S. LUNDBERG, JORGE GONZALEZ-REYNA, JOHN RANDOLPH SUYDAM,* AND *PAUL PIPPIN* 9

PUBLIC RELATIONS

A SECTION EDITED BY D. KNICKERBACKER BOYD 31

DATA SHEETS PREPARED BY *DON GRAF*

PLAYGROUND POOLS; SIZES OF CHINAWARE; SHOW WINDOW DESIGN PRINCIPLES; CORRECT STUCCO CONSTRUCTION 263

HERE, THERE, THIS, AND THAT

NEWS FROM THE FIELD, COMPETITION ANNOUNCEMENTS, AND BOOK REVIEWS, ETC. 16

COVER DESIGN AND TYPOGRAPHY BY *GUSTAV JENSEN*

PENCIL POINTS

KENNETH REID, EDITOR, CHARLES MAGRUDER, MANAGING EDITOR
DON GRAF, TECHNICAL EDITOR

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ON SEEKING PUBLIC FAVOR

EDITORIAL COMMENT BY KENNETH REID

It is our persistent belief that every architect, every day, can and should do something, however small, to advance himself and his profession in public esteem. Every job he does, every contact he makes, affords an opportunity to register upon the lay mind a favorable impression and a clearer understanding of architects and architecture. Even that much, conscientiously done by every individual practitioner, would have an expanding total effect. That it is not universally done is a pity.

But we must, both as individuals and as members of a group, do more. We must actively seek ways and means of reaching the public eye and ear with evidence that proper architectural service pays and that seeking to build without it leads to neither savings nor satisfaction.

To place before the profession suggestions of many ways in which public attention can be gained, we recently instituted a new section on Public Relations, now in its third month of existence. Under the competent editorship of D. Knickerbacker Boyd, it is becoming a clearing-house for ideas whereby the good cause may be advanced. We urge you to read it, to make use of it, and to contribute to it.

Public relations activity is no new subject for discussion among architects, nor is it fair to say that nothing has ever been done by the profession towards public education. It is true, however, that what has been done has been sporadic and scattered. What is needed is a broad, strong, general campaign by architects, well-organized and directed on a national scale. There is evidence of a growing sentiment in many localities among architects who are aware that they must either exert themselves on their own behalf or go down before the wave of non-professional competition. Is it too much to hope that the forthcoming convention of the American Institute of Architects, in which many of the State Associations are going to participate under the unification plan, will consider the problem and make a move to develop such a campaign?

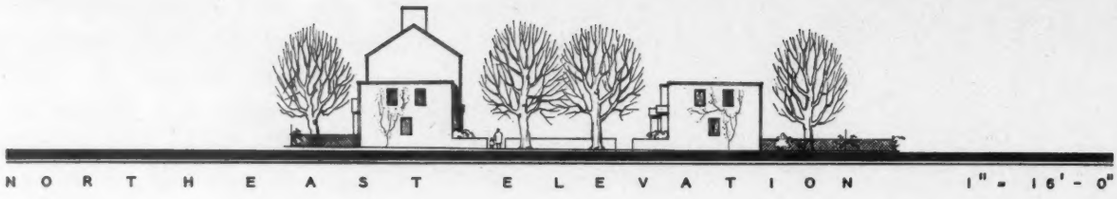
* * * *

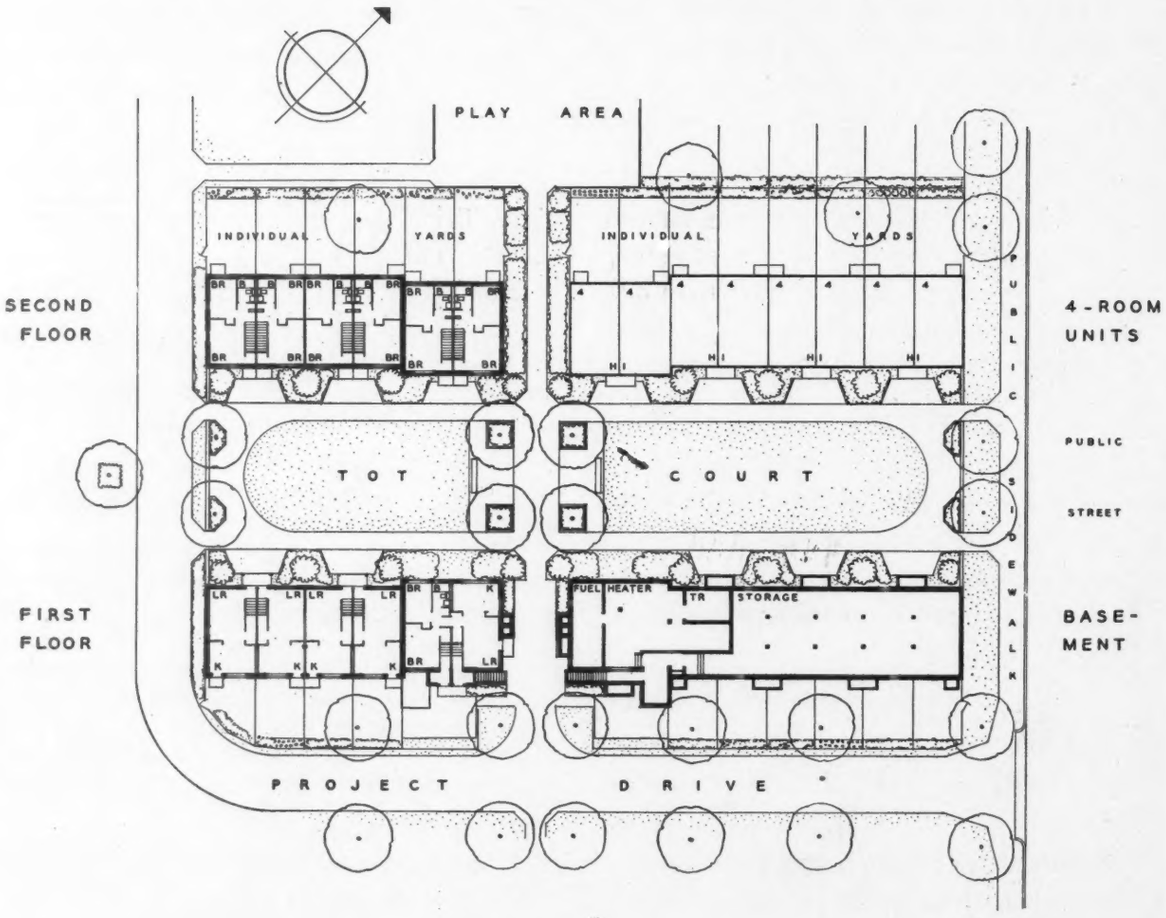
No word has reached us as to the final decision by the Massachusetts General Court on the pending registration act. As the last populous State to remain in the ranks of those without registration for architects, Massachusetts has been slow to follow the example set by Illinois some forty years ago. She should, when she finally acts, have a model set-up, using the experience of other States as a guide to perfection.

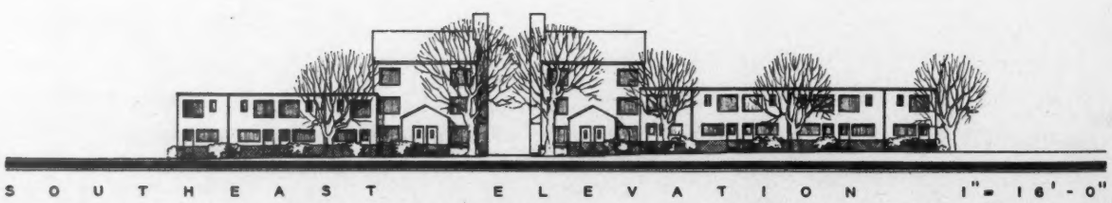
Oddly enough, while the hearings on the bill were in progress, public attention was focussed on the need for some sort of controls over the practice of architecture, by an untoward disclosure during the trial of the Mayor of Cambridge for political corruption. Several architects admitted on the stand that they had "kicked back" a third of their fees on city work in accordance with established local custom. The effect of these admissions was not, of course, beneficial to the general standing of the profession, even though it is recognized that most architects do not become involved in such shady practices, no matter how tempted.

The architects in question were granted immunity for their testimony but their professional brethren will no doubt inflict appropriate discipline. Meanwhile the pending legislation will perhaps benefit from the whole incident and be passed speedily.

If we can believe what we hear, many an architect has been saddened at the completion of a low-rent housing project to find that he is out of pocket, having spent more than his fee. It becomes important, therefore, to examine any method or technique whereby the cost to the architect of producing an adequate set of drawings for this special class of work may be lowered. W. Pope Barney, of Philadelphia, discusses on the following pages some of the things he and his associates have discovered by experience on several housing projects, and particularly on the Glenwood Project for the Philadelphia Housing Authority. His findings are thus placed at the disposal of other architects who may find them applicable in their own work. We expect that practitioners in other cities will later on add to the discussion from the point of view of conditions in their communities. The pooling of such information is one way of arriving at a condition where architects can do low rent housing and still remain solvent. K. R.







TYPICAL FOUR-ROOM UNITS IN PLAN AND ELEVATION

GLENWOOD PROJECT—PHILADELPHIA HOUSING AUTHORITY

AN ARCHITECT'S VIEW OF LOW-RENT HOUSING

AND A TECHNIQUE APPLIED IN PHILADELPHIA

BY W. POPE BARNEY

Much has been said (some of it very pungently behind closed doors) by the profession on the subject of Housing, but little has been written by those who have actually performed the architectural services required. This evinces a wisdom understandable by those who have had the experience but it is not conducive to technical progress since they only can write with an authority born of difficulties encountered and in some measure mastered. At the risk therefore of seeming dogmatic, I shall try to present our case.

To the uninitiated, Housing seems a simple Architectural problem. Simple it is from one standpoint, but that standpoint presupposes a number of conditions ordinarily possible of predetermination but which are in reality impossible of such predetermination in the case of Low Rent Housing.

The client being an unknown group of low income individuals, is inarticulate and rarely has either the organization, the opportunity, or the necessary intelligence to state the program of needs. This must therefore be stated by social workers or other technicians, who are without similar former experience and are reaching for factors that are capable of wide divergence of interpretation. If the program in its entirety could be authoritatively predetermined, its architectural solution would not be very difficult. The experience of our group, however, is a clear proof of the impossibility of such clear-cut statements of the program. The competition which we won had as a program a document which had been given the most exhaustive thought by trained and experienced individuals. The fact that our group was placed first in a field representative of the profession in Philadelphia would indicate that we had at least approached a solution. Nevertheless, the final working drawings are completely different from the competition drawings. This difference came about by the reconsideration of certain points in the program.

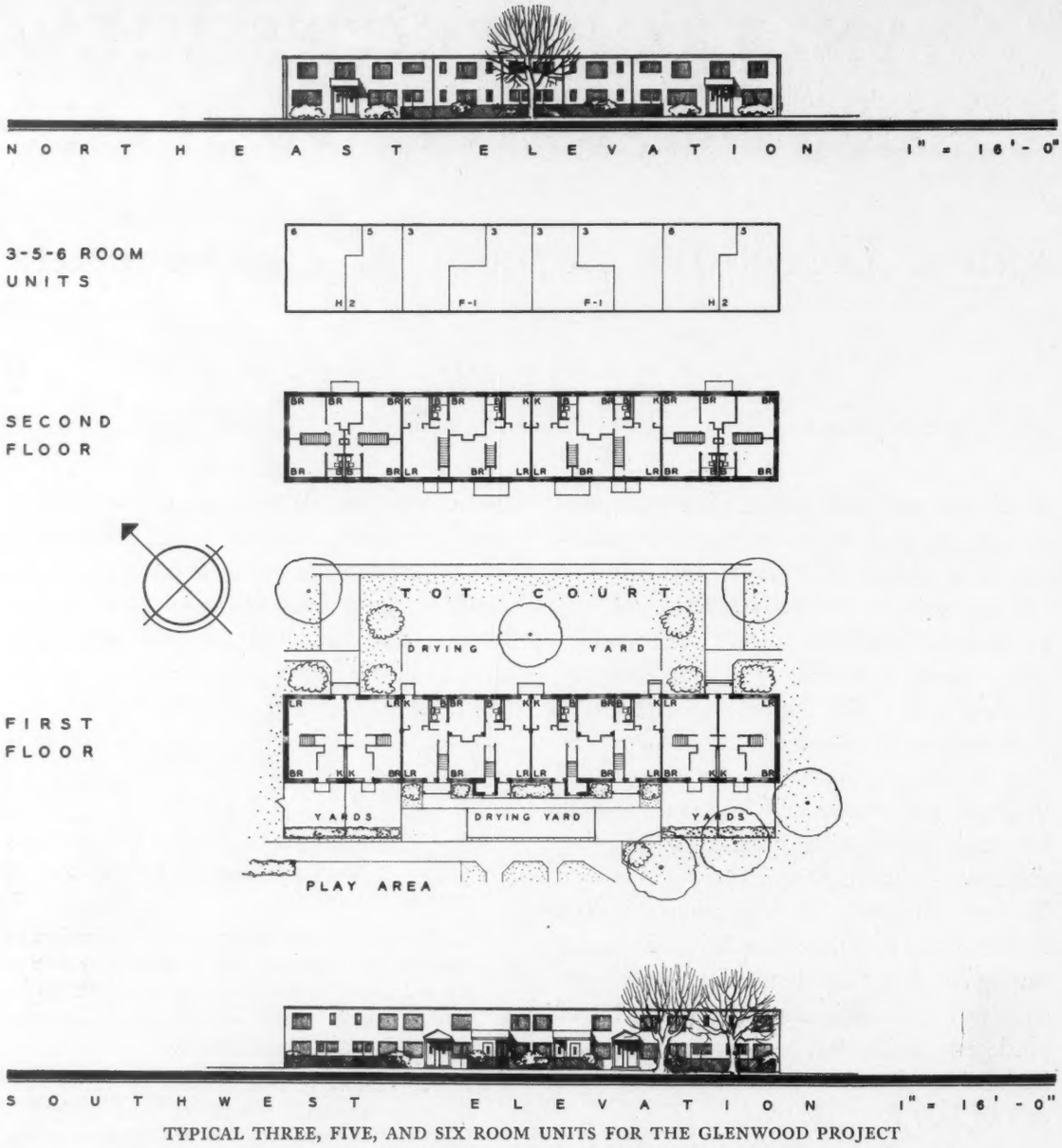
1. The percentage of land coverage, which in the program had been left to the Architect's judgment, was later set at a different figure by the Housing Authority.

2. The relation of streets within the project to those of the city plan which had been left to the judgment of the Architects was later set by certain policies of the City Planning Commission and other City Authorities.

3. An exhaustive investigation by mechanical engineers retained separately by the Philadelphia Housing Authority, prior to the retention of the architects, had resulted in some extremely interesting conclusions which would only be tenable if the individual living units were designed so as to make the installation of the engineers' heating scheme simple and economical.

These three changes were so fundamental that little of the original concept could be salvaged.

It is therefore my opinion that in Low Rent Housing *The Program and Its Solution Must Evolve Simultaneously*, each contributing to the final determination of the other —and this evolution must be, under the leadership of the Architect. It is in this way only that the Architect can perform his real function of coordinator. Throughout his professional life the Architect endeavors to do just this. He should naturally, by reason



TYPICAL THREE, FIVE, AND SIX ROOM UNITS FOR THE GLENWOOD PROJECT

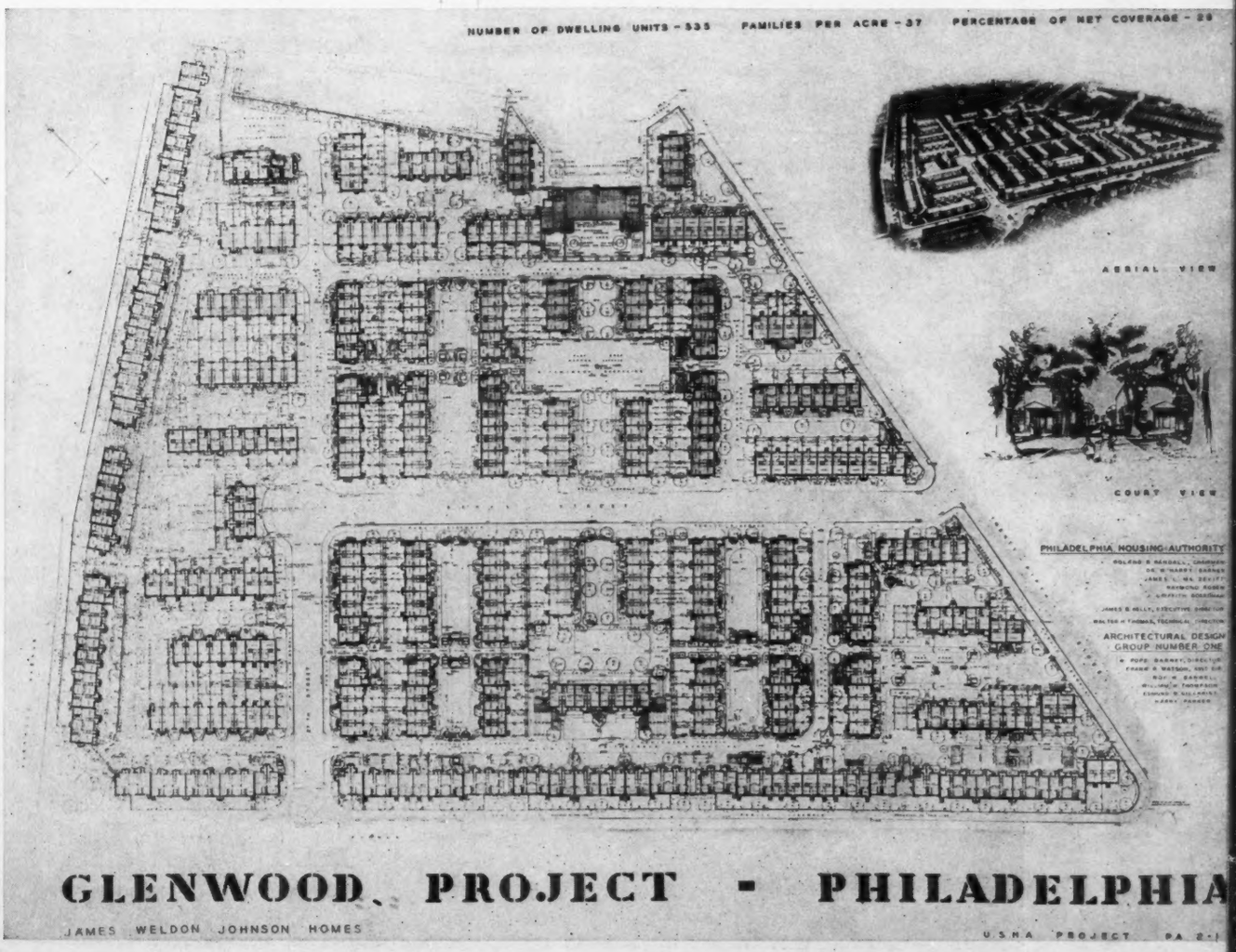
of his experience and training, have a comprehensive view of the entire problem—social, economic, structural, mechanical, and Architectural. I am convinced that real progress in Housing will come only from demonstration on the part of the Architect of increasing ability to see detail in its proper perspective, and harmonize the divergent claims of the various personalities and factors involved. *This Is the Real Problem of Housing; Coordination.*

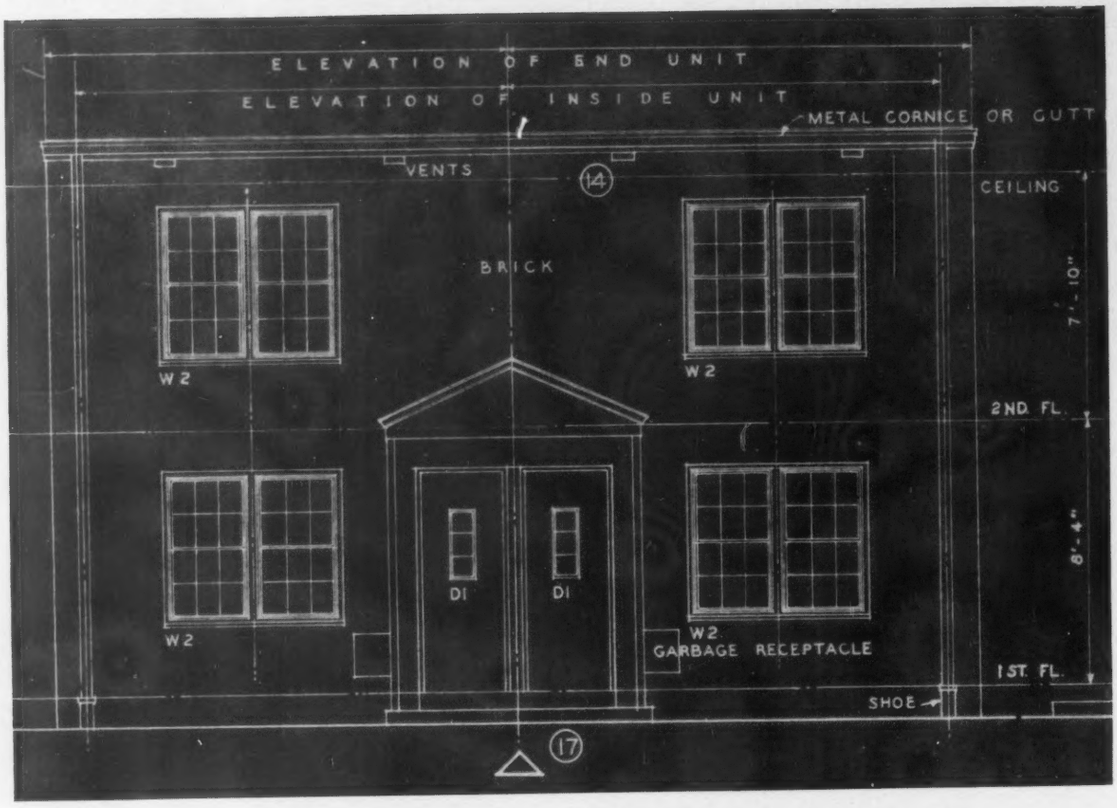
The Site Plan, giving building locations and the allocation of ground for service yards, open areas, play and sitting areas, walks and drives, etc., is the essence of the problem from a planning standpoint. Living units for any particular locality may be narrowed down to a few variations but the Site Plan has so many possible expressions, even after its fundamentals have been agreed upon, that it presents one of the great hazards for the Architects. Until a clear philosophy can be stated and agreed upon by all concerned, it is almost profitless to make studies. The fundamentals underlying such a philosophy of Site Plan consists of:

1. Public street system
2. Project drives and walks
3. Servicing of the Living units, for incoming persons and goods and outgoing refuse, both garbage and trash
4. Allocation of outdoor spaces for communal use and for individual tenant use
5. Desirable provisions for recreation for all ages
6. Relation to sun and prevailing breezes

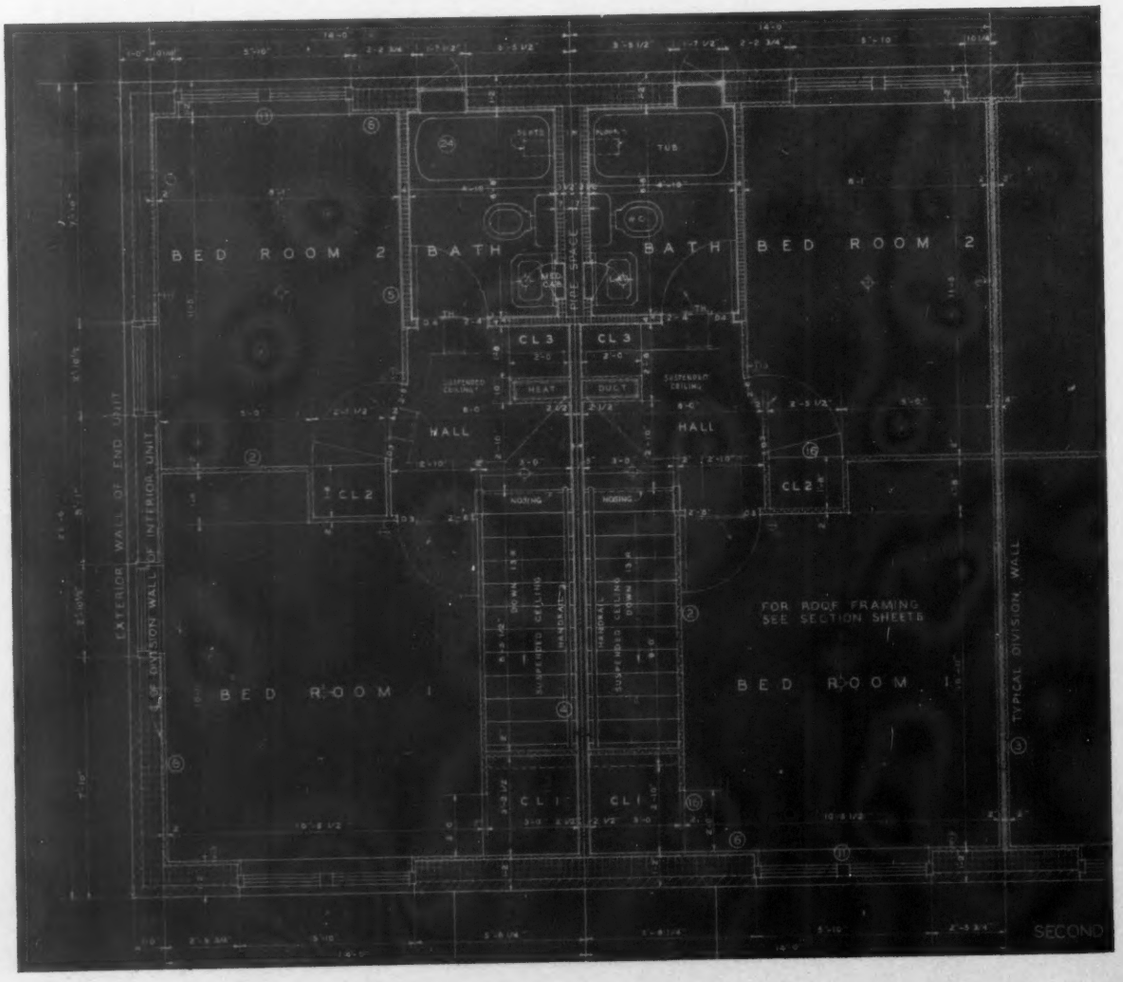
Of the above, the servicing of the living units and the policies of project recreation are most apt to cause difficulties and, by reason of last-minute changes, violate the fundamental philosophy of the plan so that it all has to be done over at great expense and dislocation of related work.

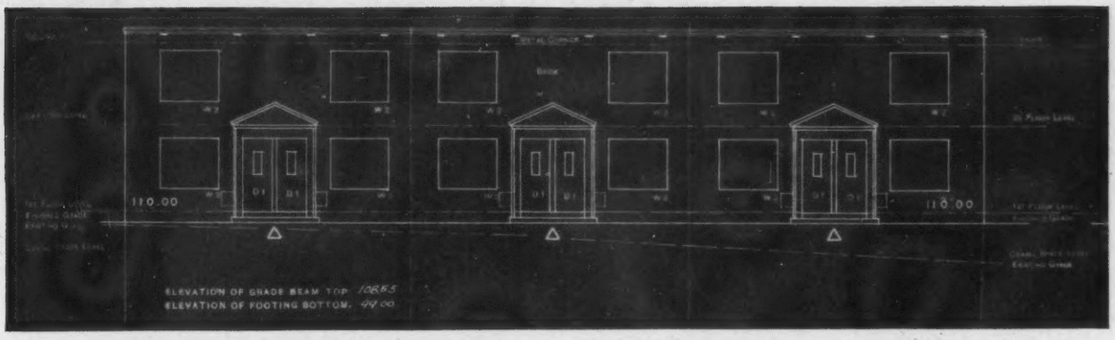
A vital point little understood by those who have not performed Architectural services on low cost housing projects is the necessity for extraordinarily complete working drawings, specifications, and shop drawings. Each living unit is so simple a structure that one is inclined at first to feel that an ordinary set of working drawings, specifications, and shop drawings would be quite adequate. This is a fallacy. Ordinarily, so simple a building would have an intelligent foreman or superintendent who would have a thorough grasp of the entire operation. In a Housing group of 530 living units it would be impracticable to have 530 such foremen and, since a great number will be in the same stage of operation at the same time, the working drawings, etc., must be extraordinarily complete or else the problem of supervision is well nigh impossible. Architects in the United States with much of their large experience gained on the skyscraper type of building are prone to think of a Housing development as being somewhat like a skyscraper laid down on its side. However, the skyscraper construction starts from the foundation and follows an orderly procedure from floor to floor with much repetition where experience gained on the lower floors can be made available for the construction of the floors above. It is one building and, despite its many complications, is essentially more simple than a low cost housing project which may conceivably consist of 50 to 100 buildings, all of which must ultimately be

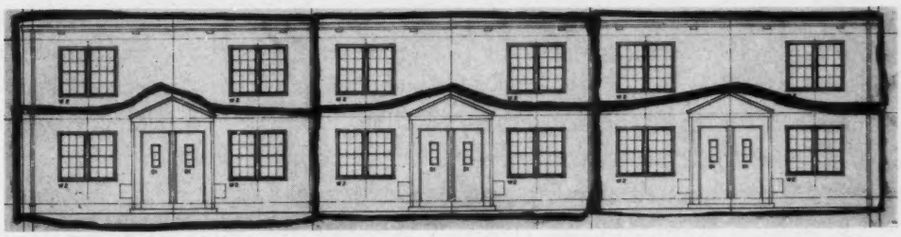




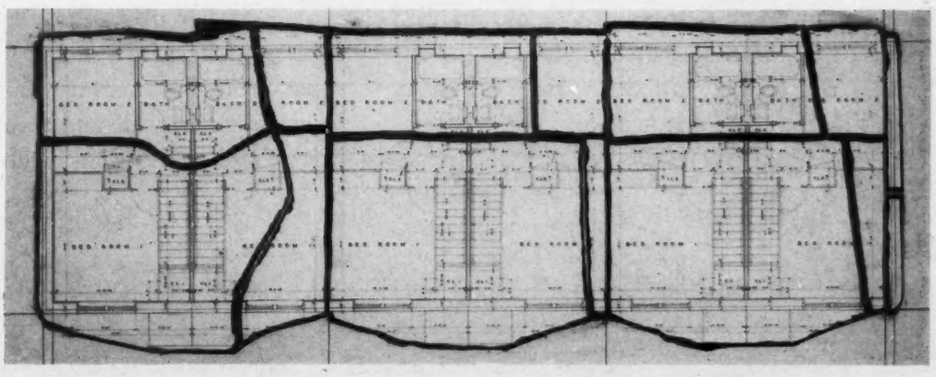
HALF-INCH SCALE TYPICAL DETAIL DRAWINGS FOR THE GLENWOOD PROJECT

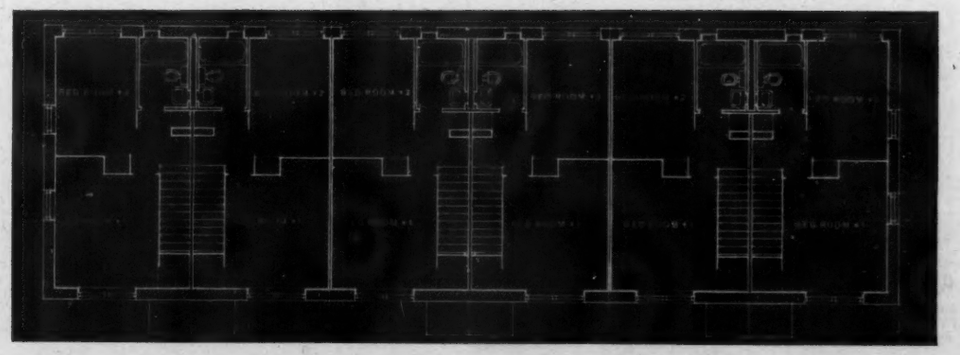






TO INCREASE POSSIBLE NUMBERS AND EFFICIENCY OF DRAFTSMEN UNFAMILIAR WITH THE DESIGN, ONE THOROUGHLY SKILLED WORKER CUT AND ASSEMBLED PHOTOSTATS REDUCED FROM THE HALF-INCH TYPICAL DETAIL DRAWINGS. THESE WERE USED AS A GUIDE TO TRACE OVER IN MAKING THE DIAGRAMMATIC EIGHTH-INCH PLANS OF EACH BUILDING. TO INSURE ACCURACY PHOTOSTATS WERE CUT ALONG THE HEAVY LINE SHOWN AND REASSEMBLED TO GUIDE LINES DRAWN ON THE CARDBOARD MOUNT. THIS PROCESS RESULTED IN INKED-IN LINENS IN THE SAME AMOUNT OF TIME THAT PENCIL DRAWINGS COULD HAVE BEEN LAID OUT IN ORDINARY TECHNIQUE IN PREPARATION FOR TRACING AND WAS FURTHERMORE ALMOST FOOLPROOF. THE COMPLETENESS OF THE HALF-INCH SCALE DETAILS IS INDICATED OPPOSITE. PRINTS AT TOP AND BOTTOM OF THIS PAGE ARE FROM TRACINGS MADE OVER THE MOUNTED PHOTOSTATS





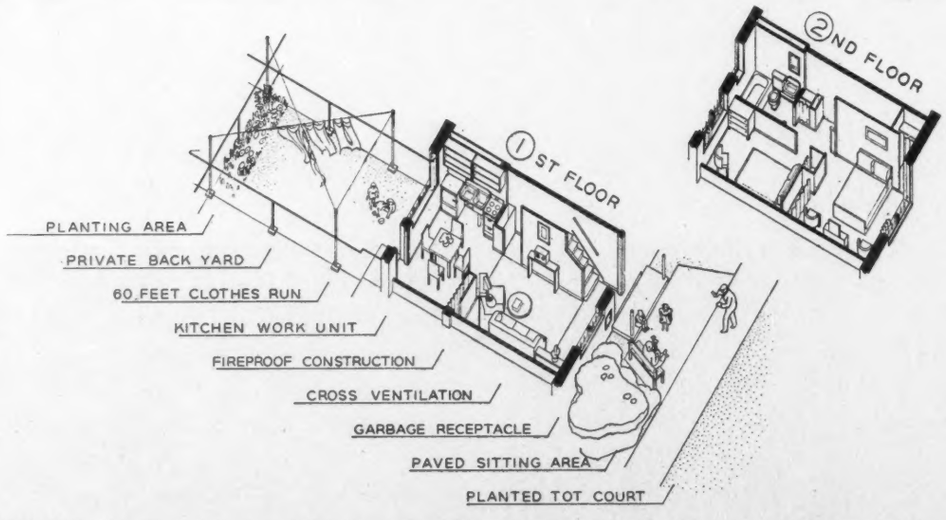
completed at the same time. The problem which the Architect faces is how to produce instruments of service in such a form that they may be absolutely complete and yet with a bulk that is not so great as to present an obstacle to those seeking information in the field. More research could be well done in this direction. The physical area covered by a large housing development is so great that it is a real problem for the foreman in charge of any specific piece of work to get his information from the site office. More than one site office brings in complications of administration. The answer, therefore, would seem to be a set of drawings so made up that the needs of foremen can be reasonably provided for with a minimum of drawings on the site. To produce a set of ordinarily complete drawings and specifications is nothing new to an experienced architect. But to produce a set that anticipates the unique field construction problem of a Housing Project is something which has not been completely solved and is being given less thought than it deserves by many of us.

In connection with the above, the use of a location diagram on each drawing to show its relation to the whole site is of course extremely helpful.

For the purpose of estimating, diagrammatic plans of all buildings at small scale, together with large scale detailed drawings of each dwelling type, are adequate and in the interest of efficiency; but for construction purposes individual buildings need full information and all variations of dwelling types should therefore be available at large scale. No matter how simple that variation may seem to the designer in the drafting room, it is complicated and confusing to the constructor in the field unless fully shown at large scale.

Full-size details should be a part of the drawings at the time of estimating. They will then receive more consideration from the standpoint of minimum costs to attain a given end than they will if made later. One of the essential differences between Low Rent Housing and ordinary practice is the tremendous increase in importance of small savings on any repetitive element. It is this realization, on the part of the Architects and Housing Authorities, that accounts for the slowness with which successful projects have been evolved.

This slow progress becomes very hazardous to the private Architect because of the rapidly mounting overhead costs if his drafting room organization is built up more rapidly than is warranted. At the start of a project, very few men can be effectively used. It is then the work of a small design staff which increases as site plan consideration gives place to study of more detailed unit plans. It does not become a subject for the drafting room proper until everything has been designed at small scale and definitely approved in writing by all of those who have authority



DIAGRAMMATIC VIEW OF TYPICAL 4-ROOM UNIT (H-1) WITH LIVING ROOM AND KITCHEN ON 1ST FLOOR (13'7" x 24'2"), TWO BEDROOMS AND BATH UPSTAIRS. GLENWOOD HOUSING PROJECT, PHILADELPHIA

to make changes. Full-size details should then be developed and not until these have been determined can any great number of draftsmen be effectively used. At this point the maximum number which can be adequately overseen should be put to work.

The developing of a project being the work of so many minds in the social, economic, real estate, financial, engineering, architectural, and even political fields, a complete system of minutes of meetings, records of research, and agreements reached becomes extremely important. The proper handling of this will take most of the time of one clear-thinking individual, who might also be giving consideration to the architect's costs in relation to his fees. Our experience has been that for the preliminary drawings and working drawings the relation of costs to fees (if these have been set in fair relation to prevailing fees on private work) remains what one would expect from his former experience. For the stage of shop drawings and supervision, the cost is abnormally high if these functions are performed in the rather unique manner which Housing by its very nature should demand.

Landscaping assumes great importance, both for making certain areas more useful for their purpose and also for giving a legitimate variety against an equally legitimate background of standardization in the buildings themselves. From an æsthetic standpoint the designer is in fact working almost entirely with landscaping and orderliness in site plan. There is little opportunity to change proportions in buildings and openings, since they are so intimately connected with inflexible functions. Even small ornamentations become a large item of cost when multiplied by the number of houses. Furthermore, the tremendous repetition of ornament becomes æsthetically as well as financially, questionable. Grading assumes an unusual importance as compared with the common experience of most architects. The magnitude of the areas involved and of the proportion which by reason of paving and buildings can not absorb rain water, makes the surface drainage a matter of meticulous care. Our own experience has been that

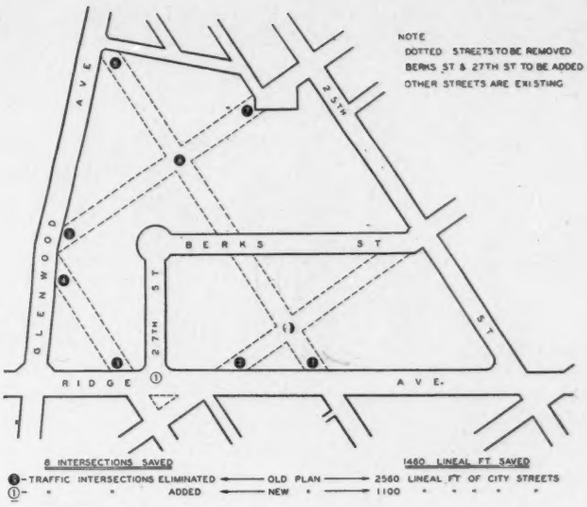


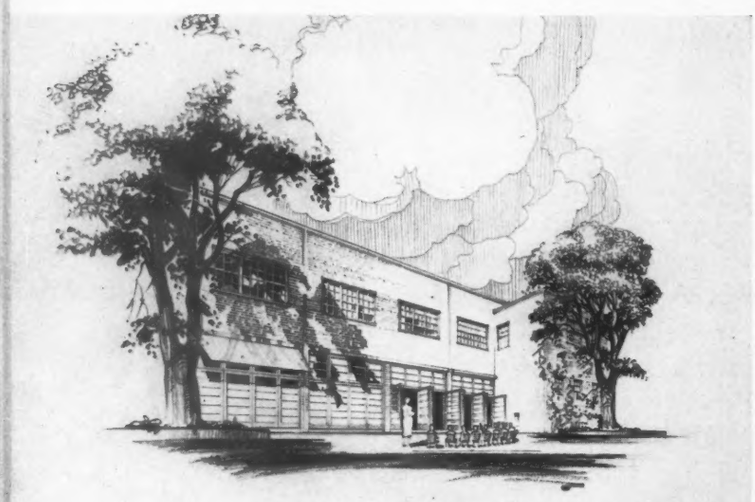
DIAGRAM SHOWING RESTUDY OF STREETS ON THE GLENWOOD PROJECT BY WALTER H. THOMAS, DIRECTOR OF TECHNICAL BOARD FOR PROJECTS OF THE PHILADELPHIA HOUSING AUTHORITY

specialists are needed at this point just as in landscaping or mechanical engineering. Mechanical and electrical work require their own drawings but should be diagrammatically shown again on the Architect's sheets for convenience of the other trades.

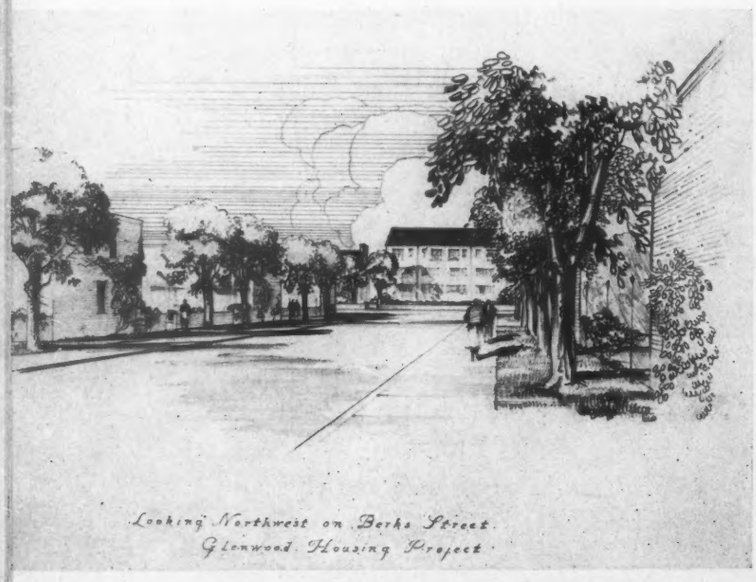
The existing pattern of living of those to be rehoused should not be changed to any great extent. It is from this fundamental that variations in solution for different locations will come and it is a failure to recognize the full implication of this fundamental that has proved so disastrous to housing in only too many instances. If people are in the habit of living in row houses, two stories in height with certain ground area which they can call their own, both in front and in the rear, it is of questionable wisdom to attempt to house them in multi-storied apartment buildings with all land devoted to communal use.

The following two pages describe in some detail the Glenwood Project of the Philadelphia Housing Authority which has been used here for illustrative material. The architects for this project were W. Pope Barney, Director; Frank R. Watson, Assistant Director; and Roy W. Banwell, Harry Parker, Edmund B. Gilchrist, and William H. Thompson, Associates.

Looking West At Buildings 2 · 3 and 4 ···
Glenwood Housing Project ·



Community Building · Nursery School Play Court
Glenwood Housing Project



Looking Northwest on Berks Street
Glenwood Housing Project ·

Recognizing that the Philadelphia pattern of living of the low income group to be housed is closely related to the type of building which in Philadelphia represents the greatest amount of cubical content per dollar of expenditure, we determined on a large percentage of two-story row house type. These comprise the backbone of the scheme and are shown in detail in the accompanying cuts. At certain points in the Site Plan where heating plants were located, this row house unit, two stories high, was varied by the adoption of a three-story unit which consists of a complete apartment on the first floor and two two-story single-family houses on the second and third. Around the periphery of the Site, apartment house units two stories high were used. Thus the entire project has no living room which is more than one flight above the ground.

The land value made possible two-story units throughout but the desirability of high mass formation at heating-plant chimney units suggested the inclusion of some three-story buildings with sloping roofs. The site originally was an old cemetery, disused for so many years it constituted a center for spreading depreciation in neighboring real estate. The project, therefore, in addition to improving the safety of abutting streets by a restudy and reduction of traffic intersections and providing adequate housing for the Low Income Group, constitutes a real improvement of land and a reversal of adjoining property decline.

The apartment house unit *(F1)*, the two-story row house unit *(H1)*, the three-story combination unit *(DF)* comprises all the variations of types used except for a small number of two-story housing units which have three bedrooms *(H2)*, thus it would seem that considerable standardization had been attained. However when slight projections, heating plants, storage basements, and specific location and orientation are taken into account, the number of variations becomes very great and the resulting multiplicity of drawings to show the varying conditions becomes extremely burdensome, not only to the Architect in his work but to everyone concerned in the final construction. This seriously affects costs and leads to my conviction that the effort toward standardization and elimination of variations is to be more earnestly sought than was true in our case.

Hoping that the Glenwood Project would be some contribution to the solution of Philadelphia Low Rent Housing, we endeavored to remove the faults of the present row house. These faults were:

1. Monotony
2. Little utility or beauty possible in yards individually developed, because of small frontage
3. Lack of safe, convenient and attractive provision for play of small children and for outdoor "Neighboring" of older people.

These objections were met by:

1. Limiting length of the row and creating individual back yards completely private
2. Communal front yards with open space for play of younger children under the eyes of their parents who have a communal sitting area under the trees at the center of each typical court
3. Providing for larger children four large play areas, some with a hard surface and some with a clay surface. (Organized games to be on a community playground near, but off, the site.)

Following the Philadelphia custom for trash collection periodically, containers are placed either at the doors of each unit or on the sidewalks of the nearest street of service drives. In the latter case the carry is never more than 125 feet. Garbage collection, following the local custom, will be by city employees from the entrance doors of each living unit. Built-in wall garbage receptacles are provided adjacent to the entrance door for each family.

There is a Maintenance Building where shops and store-rooms occupy the basement and first floor and there is a Community Building housing the offices of administration and providing meeting rooms for various sized gatherings up to 250. The largest meeting room is arranged so that it may be used also as a nursery school and health clinic for the younger children. Laundry yards for the row house units are individual, for the apartment units communal. Where possible, the latter have been placed so as not to interfere with the view, yet close to the living units for convenience.

The construction of the exterior walls is a combination of brick and cinder-block, 12″ combined thickness, furred and plastered on the inside. Interior partitions are 2″ solid plaster on wirelath. Floor construction is concrete slab and beam. Roof construction timber with tar and gravel for the flat roof and slate for the sloping roofs. Windows are double-hung metal except where glass areas or ventilation requirements pointed to the desirability of steel casements. Walls and ceilings are painted. Floors are unfinished exposed concrete.

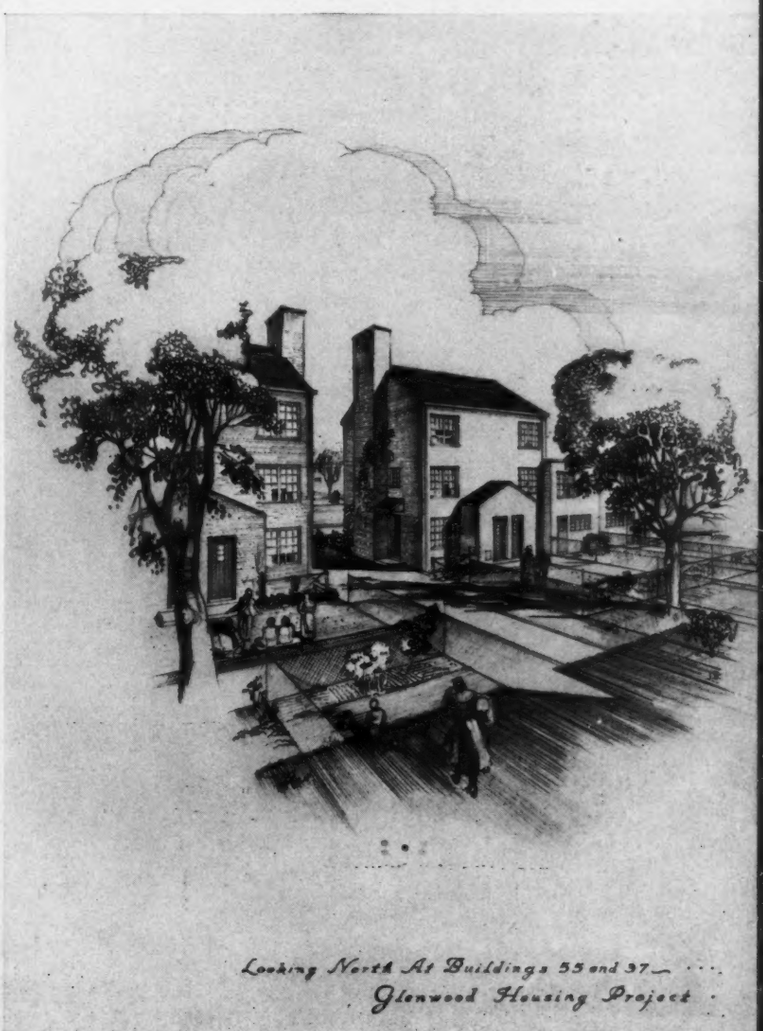
Electric lighting is from standard unit fixtures controlled by wall switches. Heating is by hot air circulated by an individual fan in each living unit, the air passing over a fin type radiator in each such unit. This radiator is supplied by hot water from an automatic coal stoker heating plant common to about 58 family units. The whole system is automatic and requires very little supervision.

The plumbing consists of a combination laundry tub and sink in the kitchen of each living unit and a three-fixture bathroom in each living unit.

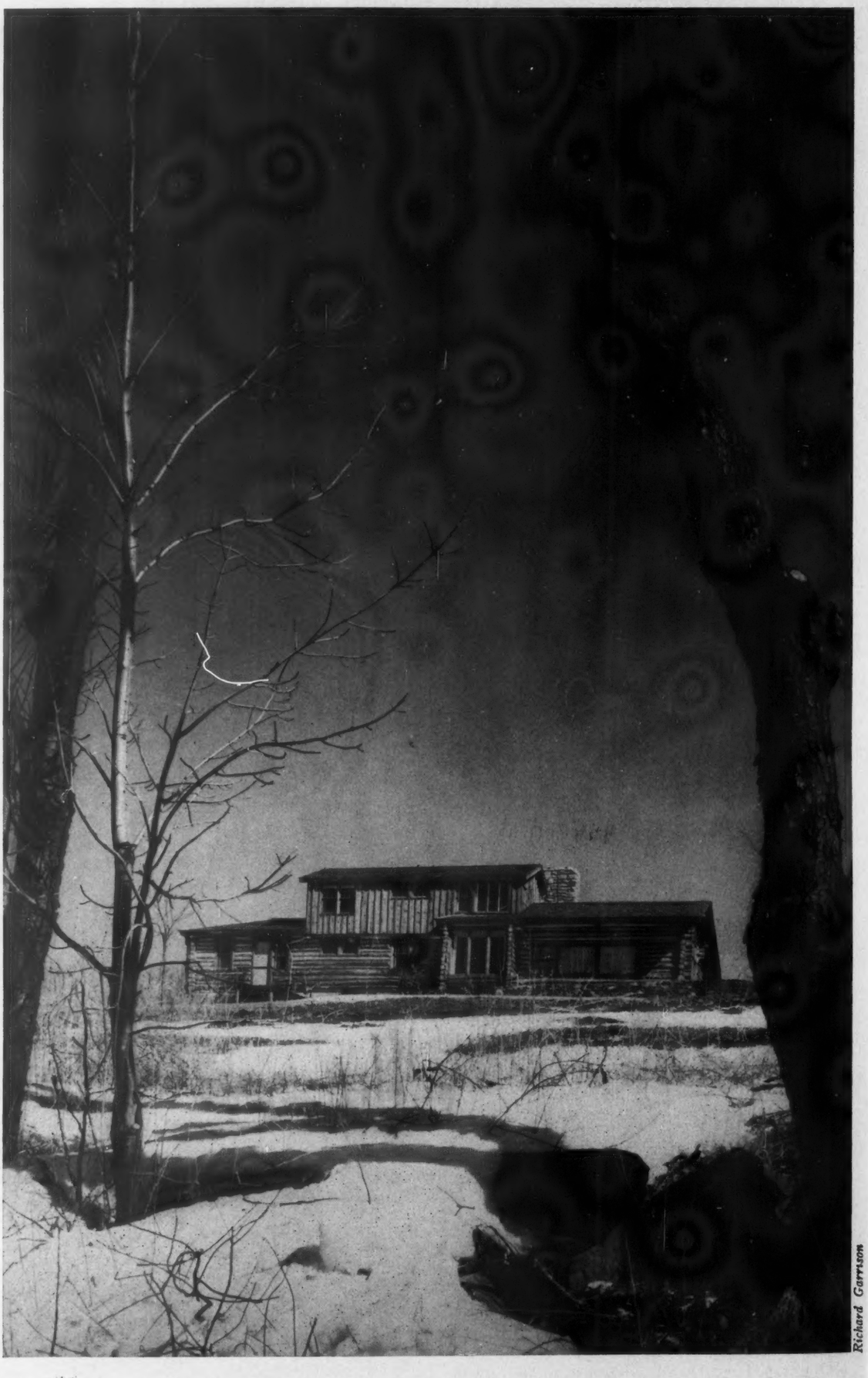
The kitchen equipment will include individual gas stove, electric refrigerator, and open-faced steel shelving. One closet in each living unit is equipped with a door but all other closets are without doors, curtains insuring ventilation at all times.

Looking Northwest At Buildings 30 and 42 . . . .
Glenwood Housing Project.

THESE SKETCHES OF THE GLENWOOD PROJECT BY JOSEPH F. BALIS OF MR. BARNEY'S OFFICE



Looking North At Buildings 55 and 37 . . . .
Glenwood Housing Project.



LOG HOUSE — BY GEORGE KOSMAK AND ERNST PAYER, ARCHITECTS

VACATION HOUSE IN DUTCHESS COUNTY

GEORGE KOSMAK AND ERNST PAYER, ARCHITECTS

The owner's desire for informality and a camp-like atmosphere suggested the log construction of the Charles E. Murphy home, Quaker Lake, New York, designed by George Kosmak and Ernst Payer, Associate Architects. Although the house was originally intended for summer use only, changes were made during the course of construction to insure comfort for skiing week-ends, Christmas, and other winter holidays. Even for summer use the exposed location atop a treeless windswept hill dictated a carefully-designed shelter equipped with a heating plant.

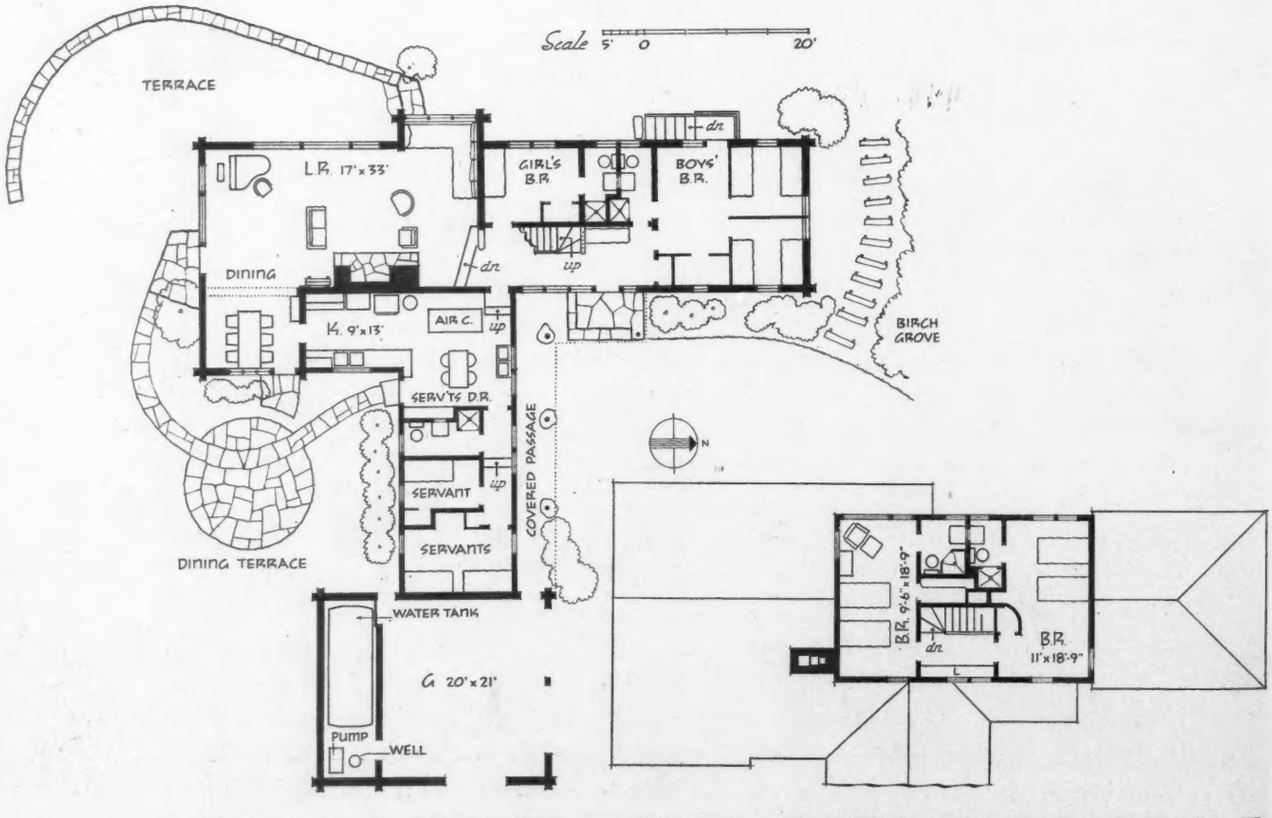
Facilities for entertaining were required in the design of this country home. In addition to the family of five, including two sons and a daughter, it accommodates servants and guests of each member of the family. A large parking court is provided on the entrance side and an entrance hall of adequate size welcomes the guests. The stair is of the most open design (see page 234) to avoid the appearance of crowding the hall, which seems to merge with the spacious living area at the far end. Rooms for the daughter and the sons open from this hall and it was intended that the baths on the first floor would be convenient for guests. The service wing at the left of the entrance shields an outdoor dining area that is just a few steps from the large, well-ventilated kitchen. In addition to all the modern kitchen equipment required for a residence of this size, an air conditioning unit, enameled white, also is located in this room. At the end of the service wing the garage roof was carried down on the south side to shelter a water storage tank and well pump. The second floor of the house is for the parents and their guests. It also enjoys the view to the west and the bedrooms are frequently used as sitting rooms.

The cost of the log wall construction compares favorably with a good quality of stud construction, according to the architects. Each course was laid around the entire building before the next course was undertaken. The log was chosen for its suitability to each bed, rolled back half way, grooved with an axe to fit the log below, coped at each end over the logs at right angles to it, and then set in place over a heavy filling of shredded redwood bark. The plan necessitated maintaining intersecting partitions to brace against horizontal collapse, and, in places where this did not prove practical, iron pins were driven through logs to hold them in their respective positions. This pin was dropped loosely through two logs, driven into the third and countersunk at the top. This permits the continual expansion and contraction which must take place cross grain of any wood. Doors and windows, as well as chimney, were detailed to permit the log wall to slide up and down at will.

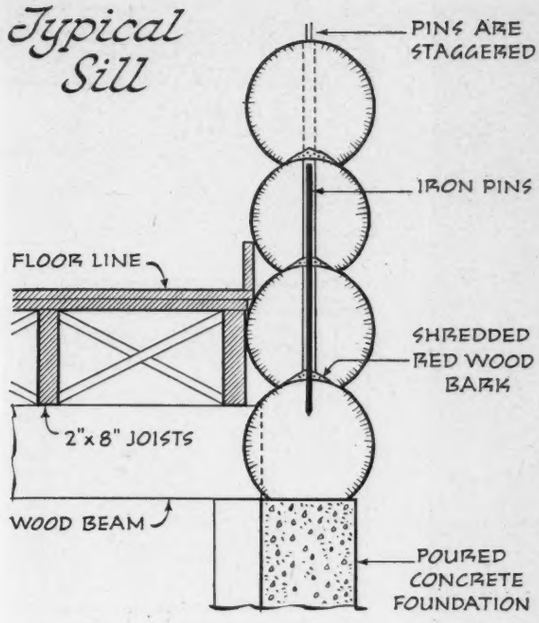
Depending upon the quality of the workmanship, such a wall can have an insulating quality greater than an insulated stud partition. The speed with which such work can proceed depends, like many other forms of construction, upon the number of tricks applied in the placing of the logs, the fitting, choosing and cutting of openings after the wall has been completed. A trained crew of three log workers can often do two and three times as much work as eight or ten able car-

Richard Garrison

LOCATION OF THE CHARLES E. MURPHY HOUSE WAS DETERMINED LARGELY BY THE MAGNIFICENT VIEW TO THE WEST AND EACH OF THE IMPORTANT ROOMS ENJOYS A FINE VISTA. THE ARCHITECTS KEPT THE MASSES OF THE HOUSE AS HORIZONTAL AS POSSIBLE, IN SYMPATHY WITH THE CONTOURS OF THE SITE, AND DIRECT ACCESS FROM THE OUTDOORS WAS PROVIDED FOR ALL THE VARIOUS UNITS OF THE PLAN. PRINCIPALLY TO AVOID MONOTONY, THE SECOND STORY WAS FACED WITH PINE BOARDS AND CEDAR BATTENS



HOME OF MR. AND MRS. CHARLES E. MURPHY, QUAKER LAKE, N. Y.



Richard Garrison Photos

THE LIVING ROOM SUGGESTS THREE CONVERSATION GROUPS—AROUND THE FIREPLACE, AT THE SOUTH END OF THE ROOM WHERE TALL WINDOWS ADMIT FLOODS OF SUNSHINE, AND AT THE BAY WINDOW WHICH IS GIVEN A SPECIAL UNITY BY CONTINUATION OF THE HALL CEILING THROUGH THE LOG SCREEN AT THE LIVING ROOM DOOR

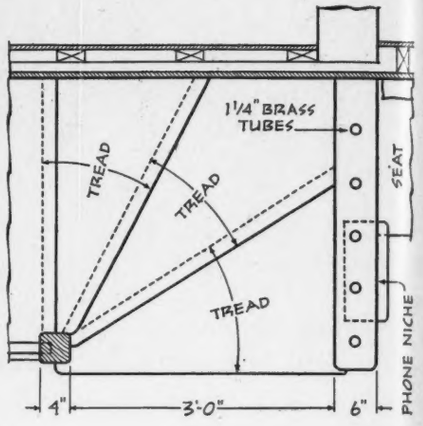
penters to whom these tricks have not been taught.

In the detailing of work of this type certain factors must be kept in mind. All joints must be cut so the moisture can drain out of them easily. They must be made free to move with the cross-grain contractions of the wood, they must be sealed with wind and water stops. Courses must be kept level and uniform by selecting each log to compensate for accumulated errors, taking advantage of the natural variation in diameter and taper of the log. Bark can be slipped from most logs easily when the sap is up, but is difficult to remove when the sap is down. The type of tree will dictate the amount of warping to be taken care of, also whether the wood is green or seasoned. The ideal log for this use is one with minimum shrinkage, taper, weight and knots. Although there are many different methods of using logs in residential construction, this method was chosen to satisfy the owner's prejudice against visibly calked joints, on either exterior or interior.

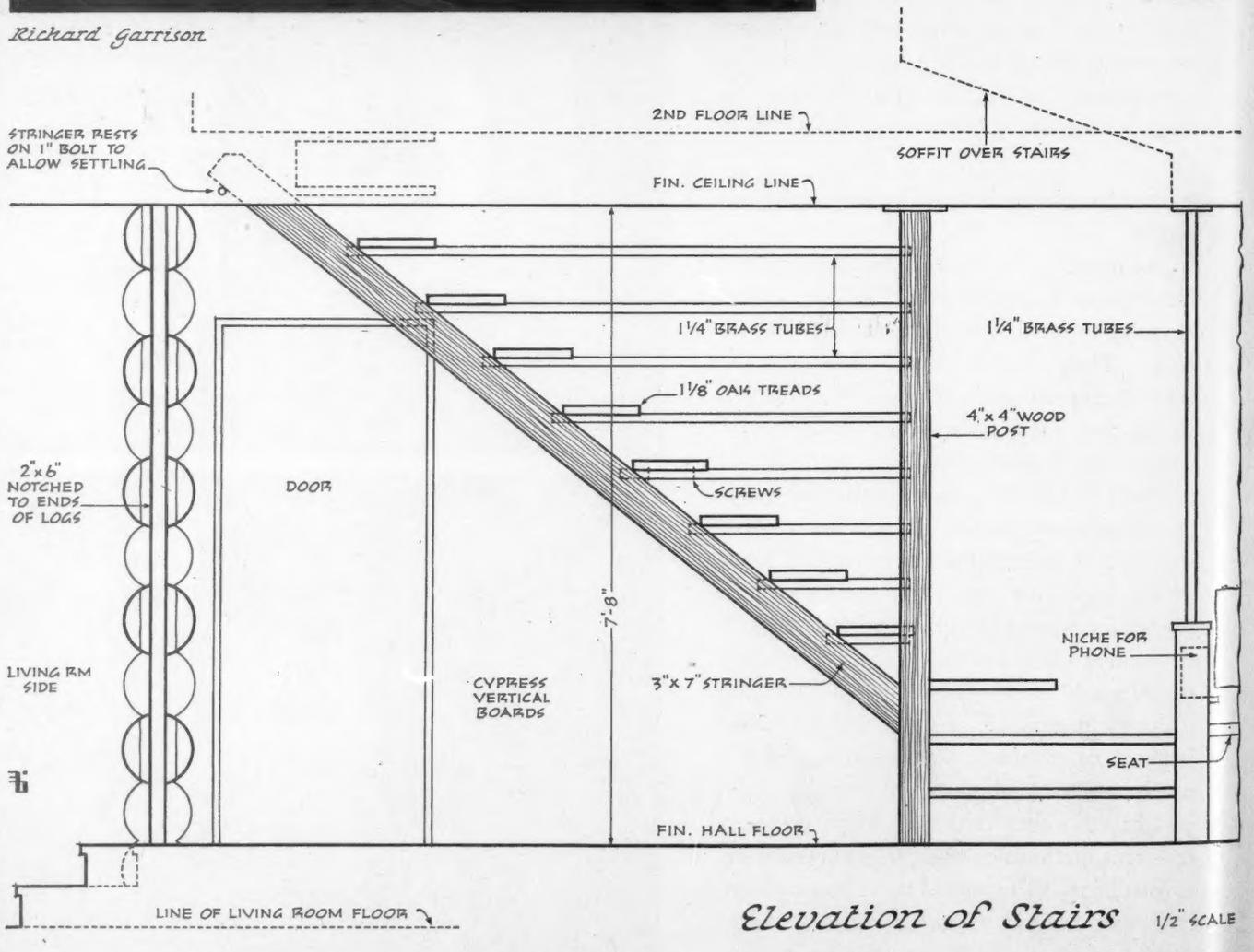
BY GEORGE KOSMAK AND ERNST PAYER, ASSOCIATE ARCHITECTS

Richard Garrison

Tread

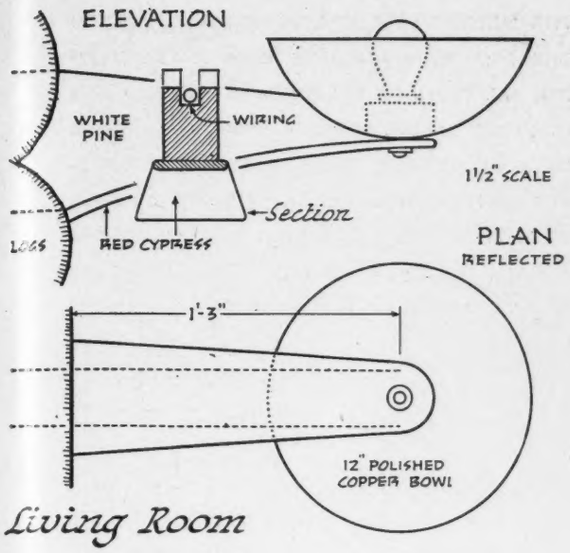


Plan

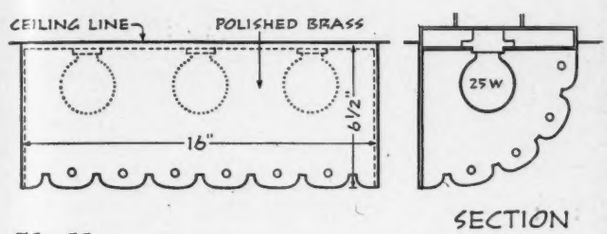


Elevation of Stairs 1/2" SCALE

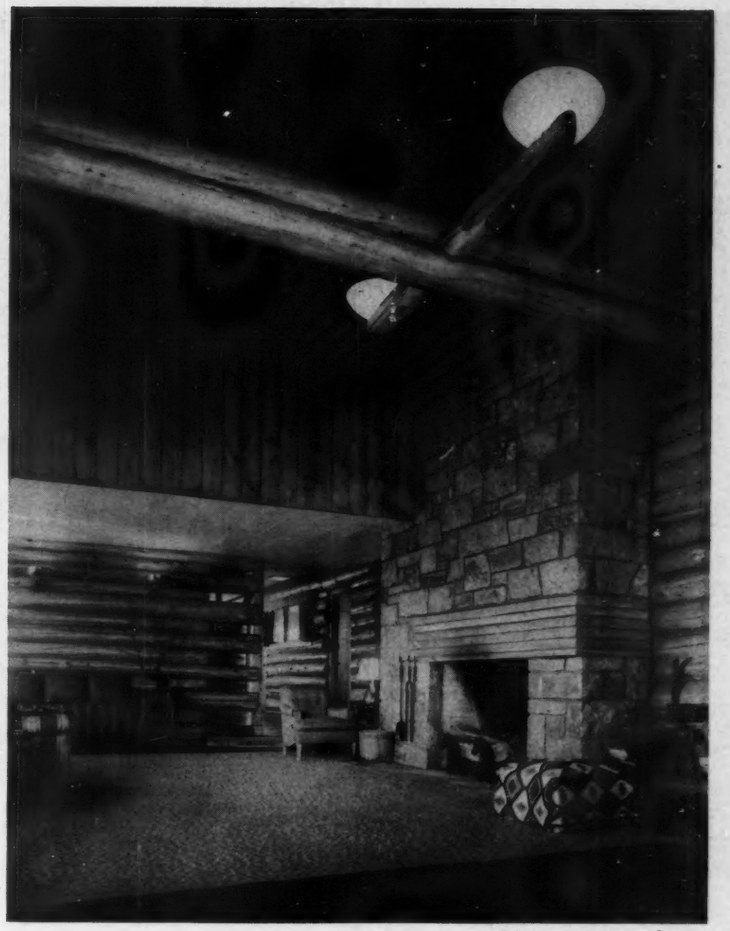
HOME OF MR. AND MRS. CHARLES E. MURPHY, QUAKER LAKE, N. Y.



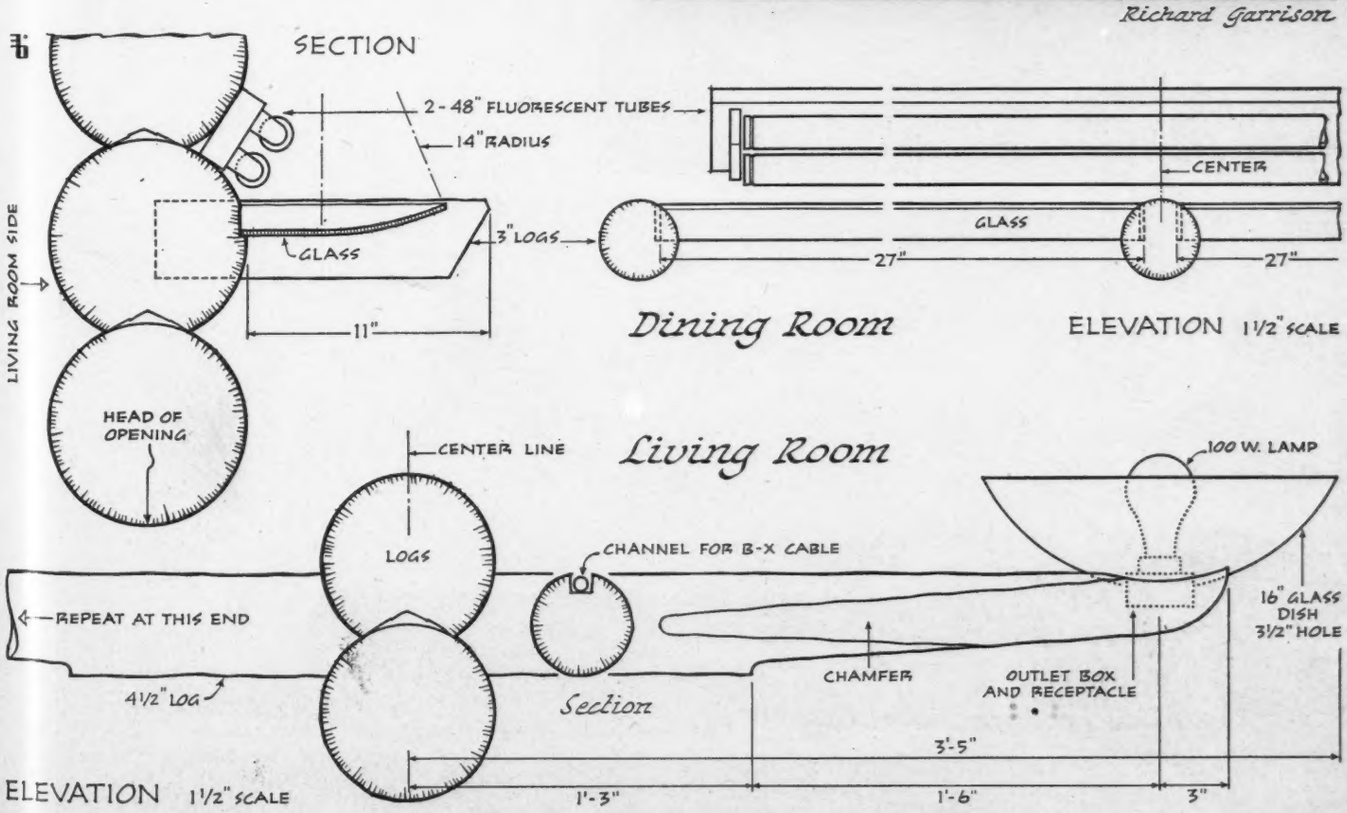
Living Room



Hall SECOND FLOOR, OVER STAIRS



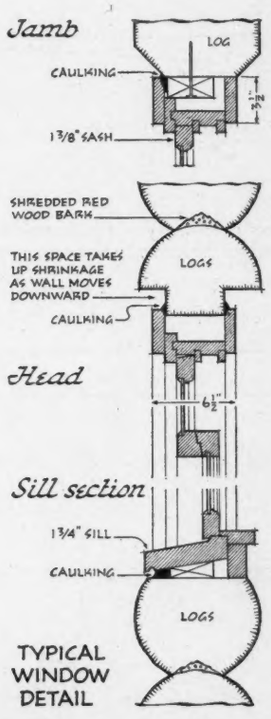
Richard Garrison

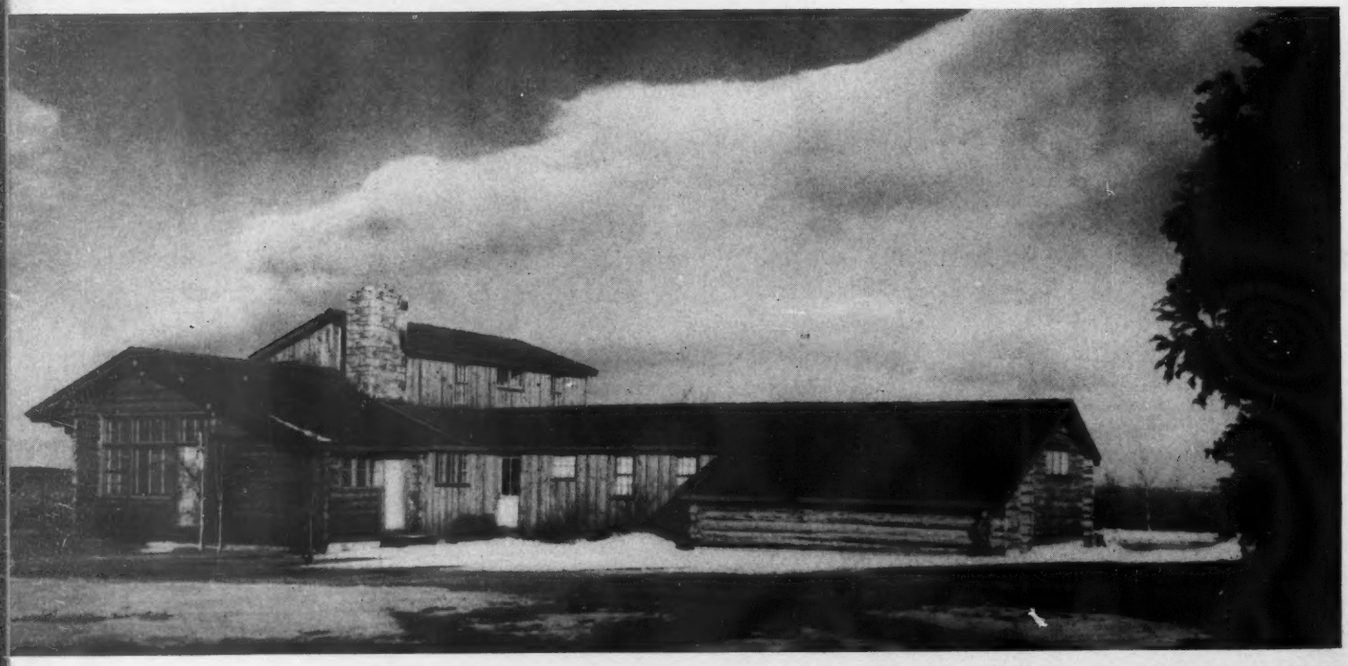


BY GEORGE KOSMAK AND ERNST PAYER, ASSOCIATE ARCHITECTS

THE METHOD OF LOG CONSTRUCTION USED IN THE MURPHY HOUSE HAS BEEN A STANDARD FOR ALL TYPES OF BUILDINGS IN FINLAND AND IN PARTS OF ESTONIA FOR CENTURIES, AND A CREW OF FINNS ACQUAINTED WITH THE BUILDING METHOD WORKED ON THE HOUSE. NOTE THAT THE SECOND STORY IS LOCATED SO AS TO ENGAGE WITH THE CHIMNEY, THUS USING ITS STRENGTH AND UNIFYING THE SILHOUETTE

Richard Garrison Photos

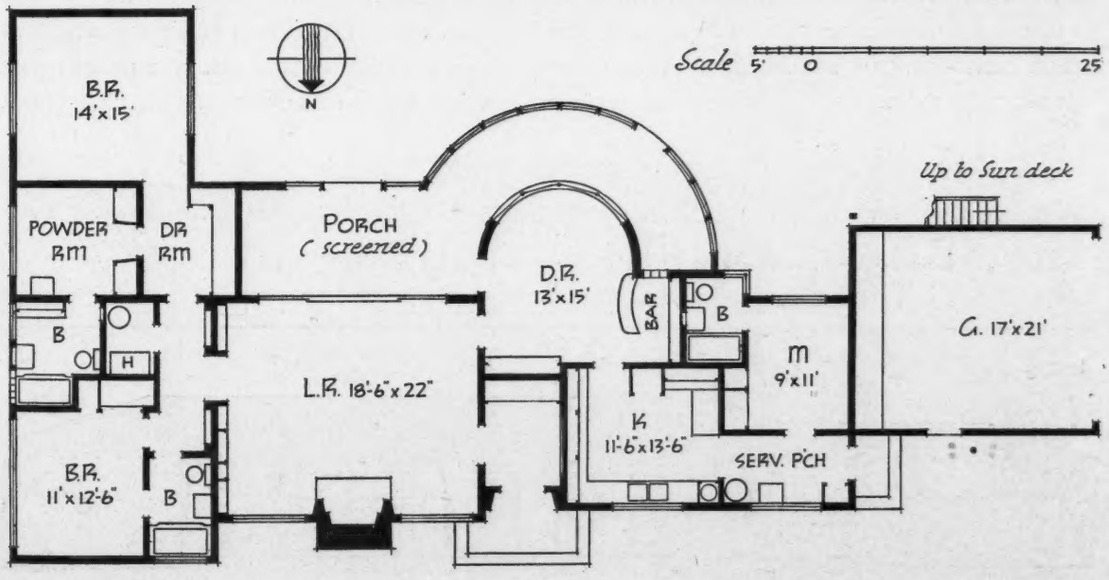




LOG HOUSE — BY GEORGE KOSMAK AND ERNST PAYER, ARCHITECTS

Julius Shulman

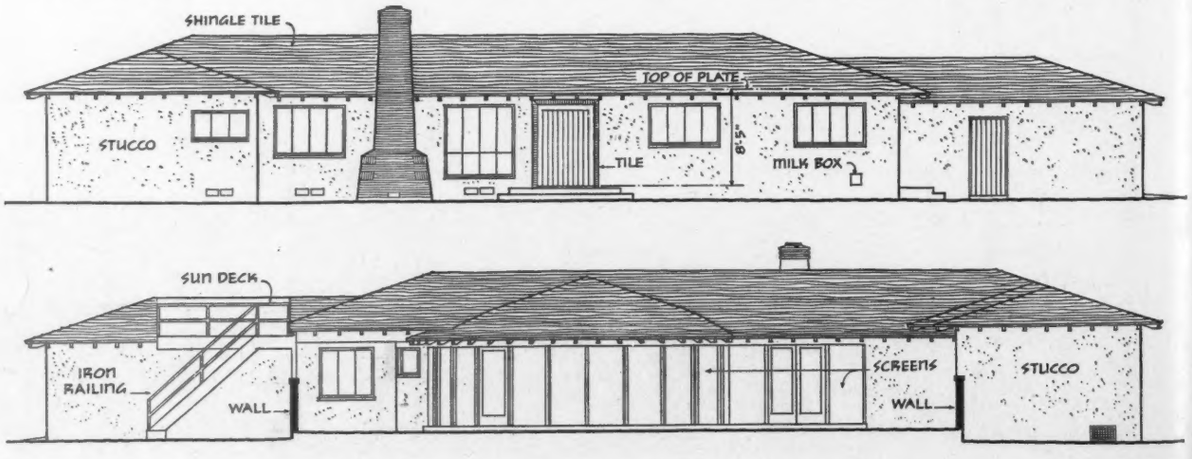
WALLED GARDEN



HOUSE AT PALM SPRINGS — BY PAUL LASZLO, BEVERLY HILLS

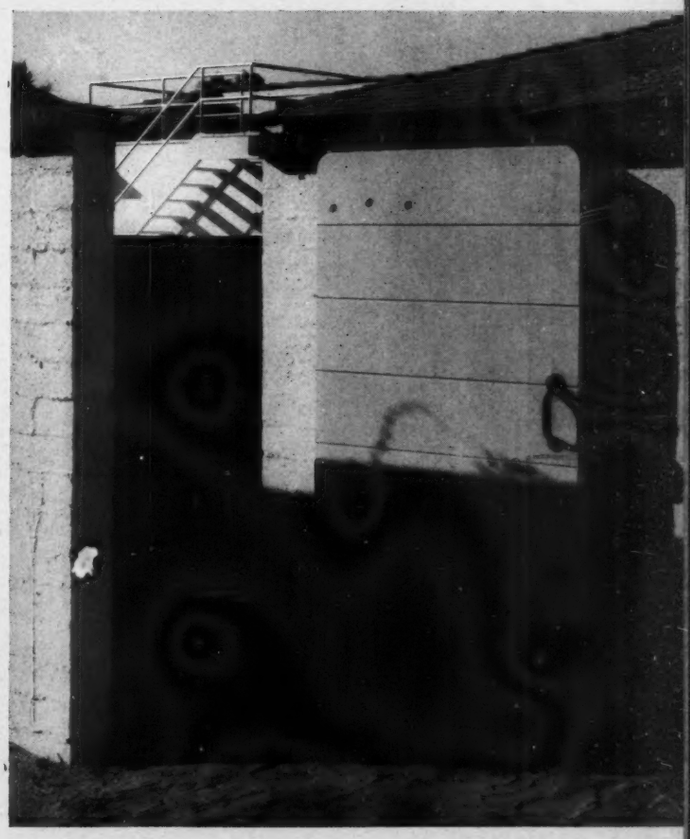
Julius Shulman

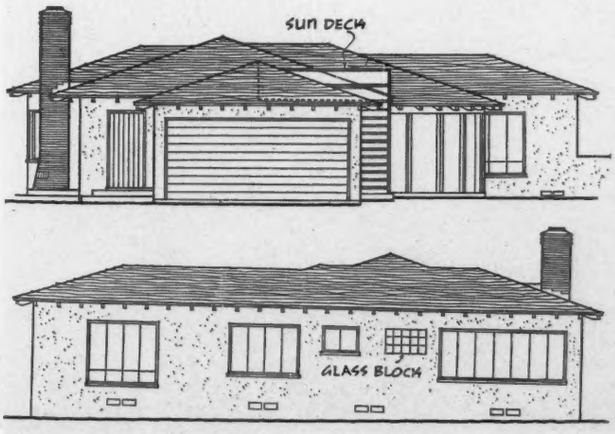
WIDE WINDOWS AND THE SPACIOUS SCREENED PORCH OF THE VACATION HOME OF MR. AND MRS. A. ROSENFIELD, AT PALM SPRINGS, CALIFORNIA, DESIGNED BY PAUL LASZLO, OF BEVERLY HILLS, CAPTURE FINE VISTAS OF THE SURROUNDING HILLS. AS THE HOUSE WAS BUILT FOR ENTERTAINING, THE LIVING ROOM, PORCH, AND DINING ROOM ARE OPENED TOGETHER. SERVICE QUARTERS ARE AT THE FRONT OF THE HOUSE, ADJACENT TO THE GARAGE, AND THE BEDROOMS ARE AT THE REAR, SOMEWHAT REMOVED FOR PRIVACY. THE STUCCO WALLS ARE GRAY-WHITE AND THE TRIM AND STEEL CASEMENT WINDOWS ARE DARK GRAY. THE ROOF OF BLUE SHINGLE TILE AND THE RED CEMENT TERRACES MAKE AN EFFECTIVE COLOR CONTRAST. THE PHOTOGRAPH ABOVE SHOWS THE APPROACH TO THE HOUSE THROUGH THE WALLED YARD BESIDE THE GARAGE. THE RECESSED ENTRANCE DOOR IS OF ASH, LEFT THE NATURAL COLOR



VACATION HOUSE OF MR. AND MRS. A. ROSENFIELD, PALM SPRINGS

A DISTINCTIVE FEATURE OF THE ROSENFIELD HOUSE IS THE ENCLOSED SUN DECK ABOVE THE GARAGE, WHICH CAN BE LEFT OPEN AS AN OBSERVATION DECK OR CLOSED WITH CANVAS CURTAINS (SEE PHOTOS ABOVE). THE VIEW AT THE RIGHT, LOOKING ACROSS THE WALLED GARDEN, WAS MADE FROM A SIDE GATE OPPOSITE THE PORCH BY DR. H. G. KAHN, OF LOS ANGELES. THE CAREFUL ATTENTION TO DETAIL, BOTH IN DESIGN AND IN EXECUTION, IS CHARACTERISTIC OF LASZLO'S DISTINGUISHED DOMESTIC WORK





DESIGNED BY PAUL LASZLO

THE LIVING AREA OF THE HOUSE IS GRACEFULLY DISPOSED. THE DINING ROOM, ABOVE, IS HUNG WITH BEIGE GRASSCLOTH. THE LIVING ROOM, BELOW, IS PAINTED A LIGHT GRAY AND OPENS TO THE PORCH

Julius Shulman

HOUSE AT PALM SPRINGS — BY PAUL LASZLO, BEVERLY HILLS

ARMSTRONG CORK COMPANY SHOWROOMS

BY DON HATCH, ARCHITECT

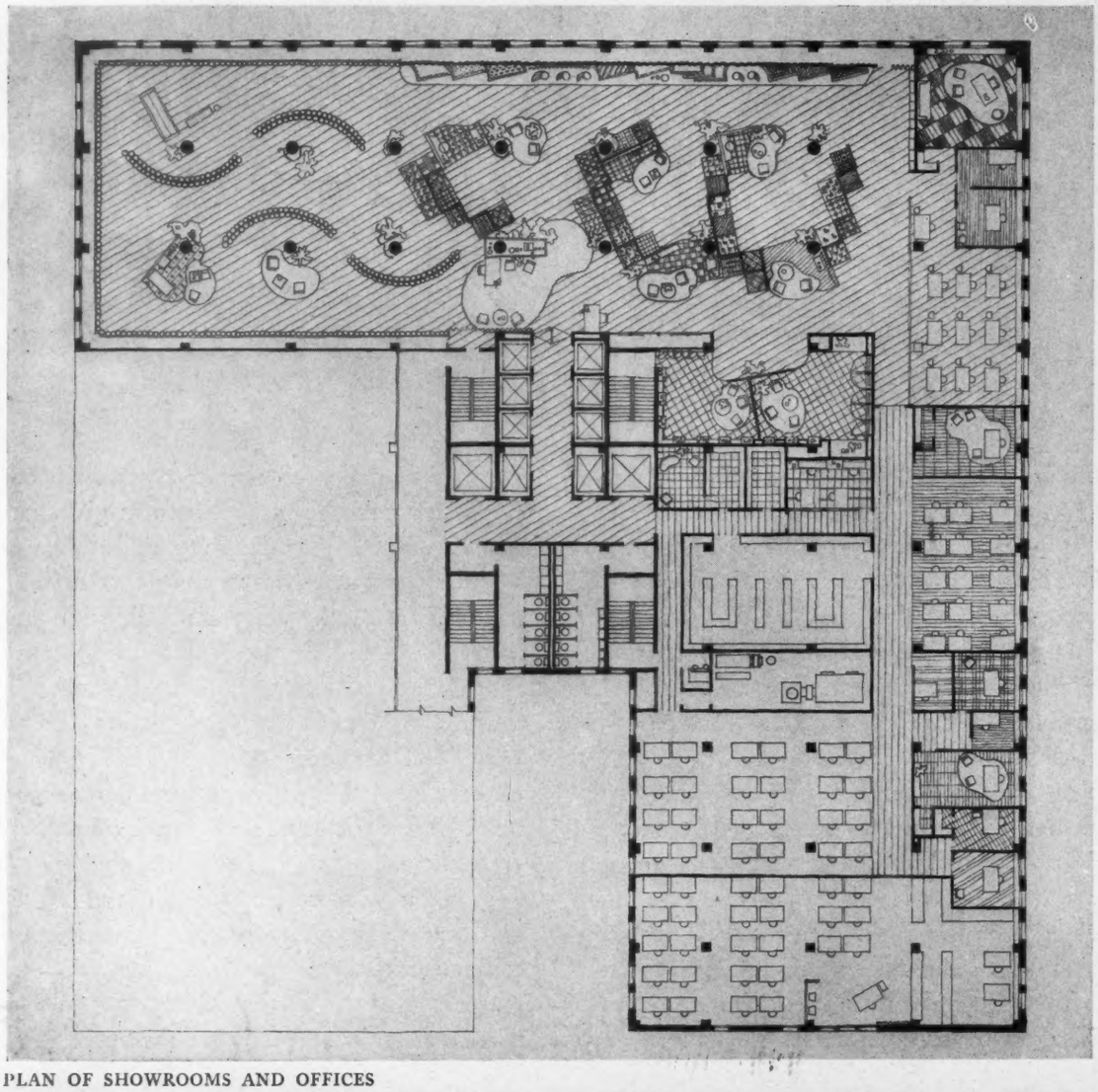
The essence of the design of the New York showrooms and offices of the Armstrong Cork Company at 295 Fifth Avenue was to continue and to increase the sale of the various Armstrong products. To do this, it was felt that the design must complement the products with an effective display background—and that the offices must function with smooth efficiency.

The governing premises in execution were flexibility, progressiveness, and economy. Flexibility is desirable to permit a number of arrangements of new products and periodic changes in the displays to retain an impression of freshness. Progressiveness is a factor of tangible value in presentation of display ideas to dealers. Economy in general construction and mechanical equipment, without sacrificing quality, is always desirable.

The floor division showroom dominates the solution by its space requirements. The existing line of Armstrong floor coverings is displayed in rolls around the walls and in free-standing serpentine racks — all at the left of the entrance and reception area. The rolls are held in place by specially-designed wood strips, topped by a plaster valance along the wall and by plastic collars in the serpentine racks. The other half of the 60′ x 170′ room is thus left free for the display of new patterns—four-foot square samples laid on movable inclined platforms that can readily be arranged in any desired layout to attract buyers and to direct their circulation through the display area. At various points throughout the new pattern section are furniture groups where visitors may rest, talk, and write orders—or even telephone.

Along the corrugated glass wall opposite the entrance a raised display platform gives an opportunity to dramatize special products. A soft drapery can be drawn to cover the wall or any part of the area, depending on the amount of sunlight desired in the showroom. The saw-tooth fluorescent ceiling lighting scheme gives partly semi-direct light from the white ceiling and the balance in directional light through continuous prismatic glass. The source of light is concealed from the eyes of one entering the showroom —giving an appearance of daylight over the entire area. Incandescent spot lights in the ceiling are used at intervals to accent the new patterns and to supply the yellow light needed for color correction of the fluorescent blue. For lighting the roll displays along the wall, a combination of fluorescent tubes and incandescent lamps mounted in a highly polished continuous reflector, concealed behind the plaster valance, give excellent distribution of light for the full height of the rolls. For the free-standing serpentine roll displays, daylight incandescent lamps, behind flush glass ceiling lenses light the rolls with good color correction.

The accent color has been taken from the newly introduced copper shade. This color appears in the linoleum pin-stripe in a white field on the floor, in the rubber base at the columns and walls, and in the linoleum tops of the tables and desks. The columns are alternately covered with yellow and grey Linowall, wisely used here to withstand extra hard wear. Eggplant rugs, maple furniture upholstered in ivy and eggplant, and citron-tinted wall add to the color scheme.



PLAN OF SHOWROOMS AND OFFICES

MODEL OF THE MAIN SHOWROOM BY
THEODORE CONRAD. PHOTO BY CHECKMAN

Richard Garrison

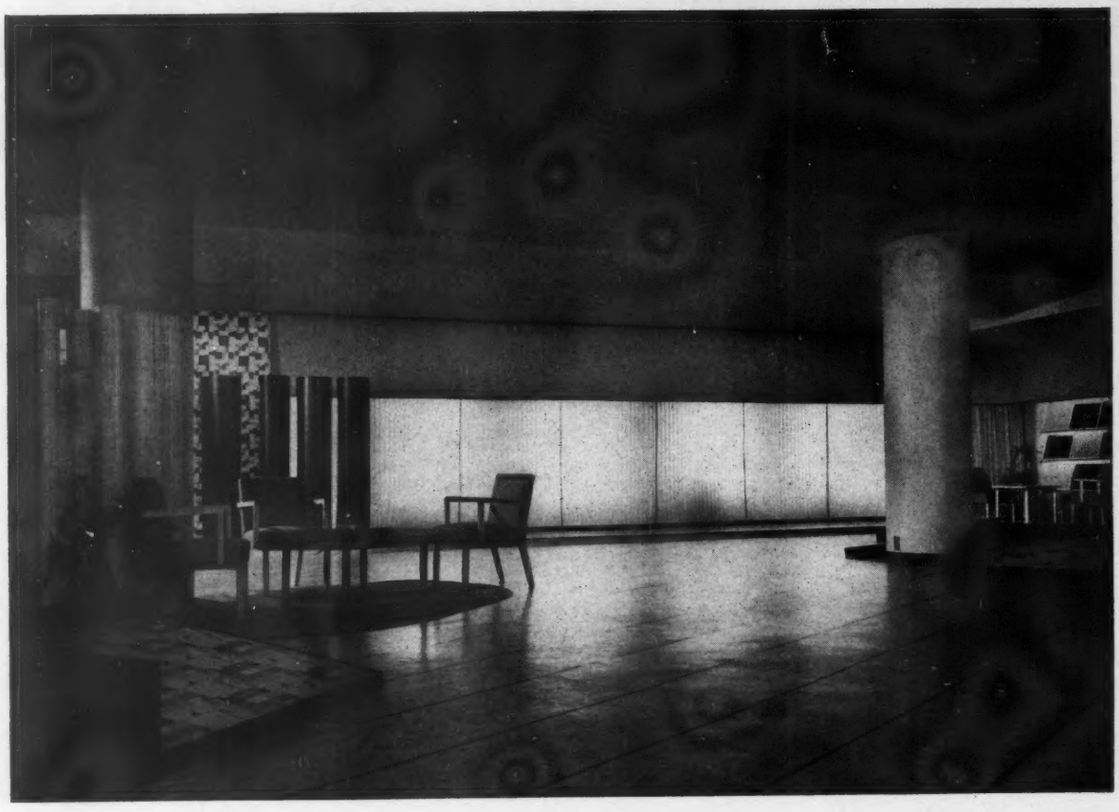
AT THE ENTRANCE TO THE SHOWROOMS IS A RECEPTION AREA. THE EFFECTIVE CANTILEVERED SHOWCASE CONTAINS VARIOUS ARMSTRONG COMPANY PRODUCTS OTHER THAN THOSE MADE BY THE FLOOR DIVISION

ARMSTRONG CORK COMPANY SHOWROOMS—BY DON HATCH

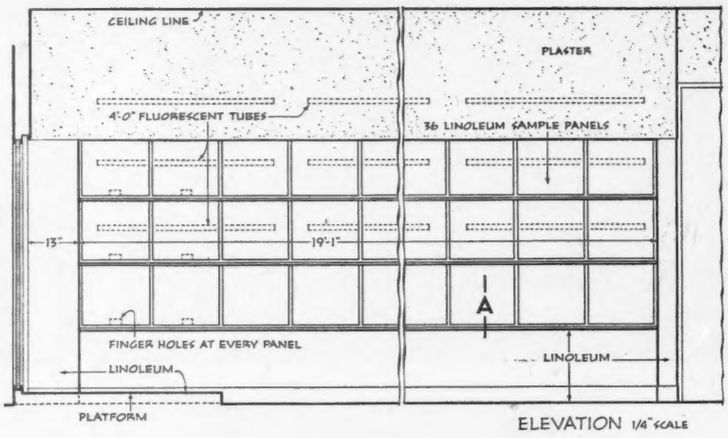
Photos by Richard Garrison

THE GENERAL VIEW OF THE FLOOR DIVISION SHOWROOM INDICATES THE SUCCESS OF THIS BACKGROUND FOR MERCHANDISING, AND THE INGENIOUS SOLUTION OF THE SPACE PROBLEM OF SHOWING BOTH THE COMPREHENSIVE EXISTING LINE OF FLOOR COVERINGS AND A CHANGING DISPLAY OF THE NEW PATTERNS

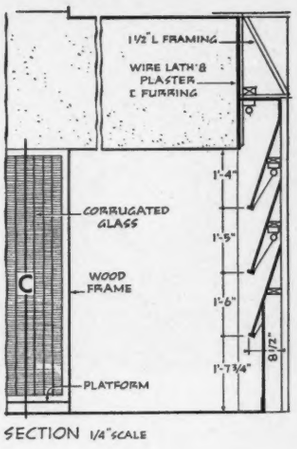
THE NEW PATTERNS, FOUR-FOOT SAMPLES ON MOVABLE INCLINED PLATFORMS, ARE IN THE FOREGROUND AND THE EXISTING LINE IS IN ROLLS ARRANGED AROUND THE WALLS AT THE FAR END OF THE SHOWROOM AND IN THE SERPENTINE FREE-STANDING RACKS. (DETAIL PHOTO AT RIGHT SHOWS SERPENTINE RACKS)



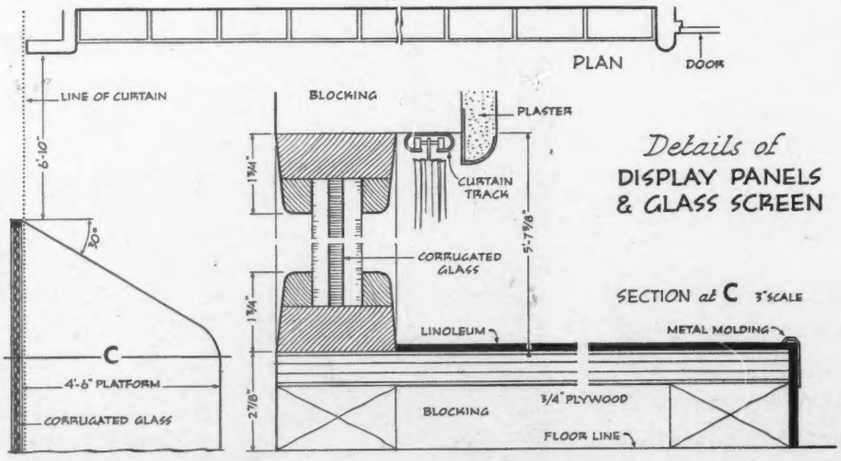
Richard Garrison



ELEVATION 1/4" SCALE

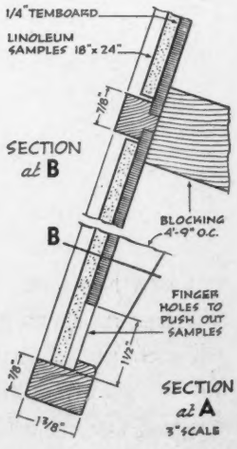


SECTION 1/4" SCALE



Details of
DISPLAY PANELS & GLASS SCREEN

SECTION at C 3" SCALE



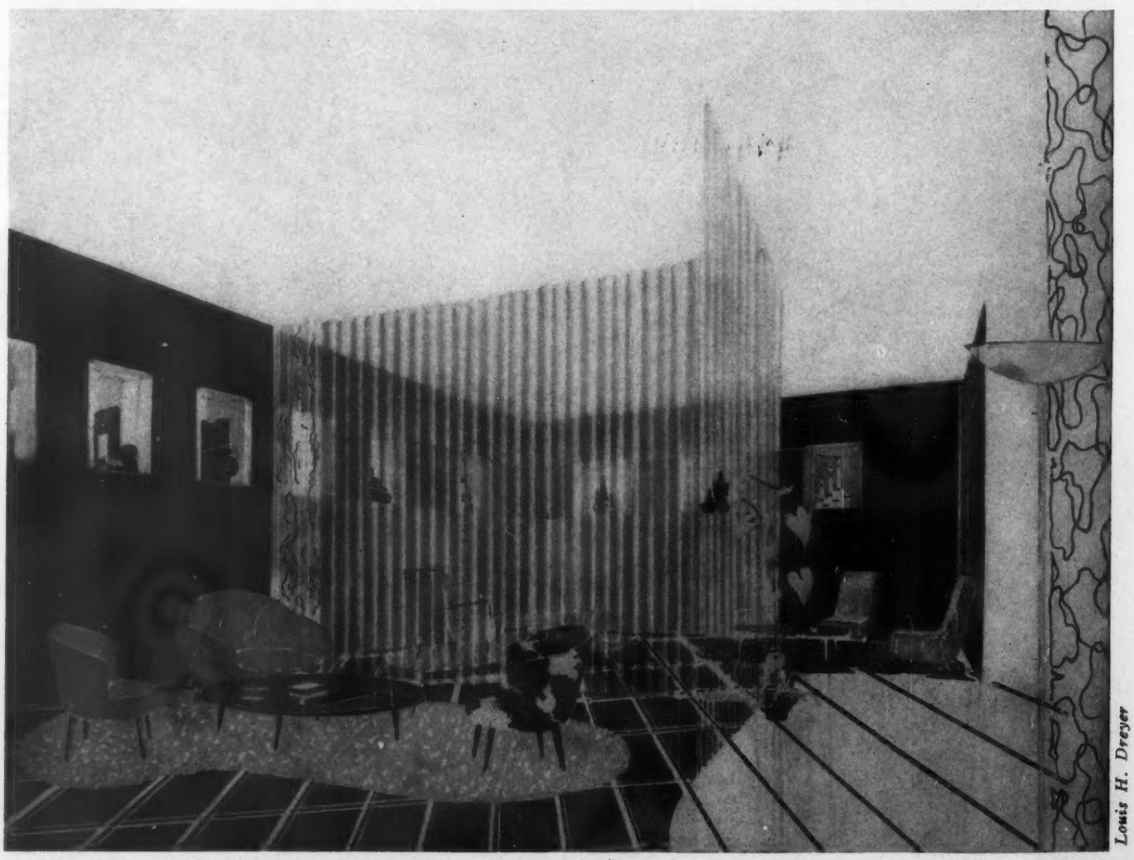
ARMSTRONG CORK COMPANY SHOWROOMS AND NEW YORK OFFICES

Richard Garrison

DESIGNED BY DON HATCH, ARCHITECT, OF NEW YORK CITY

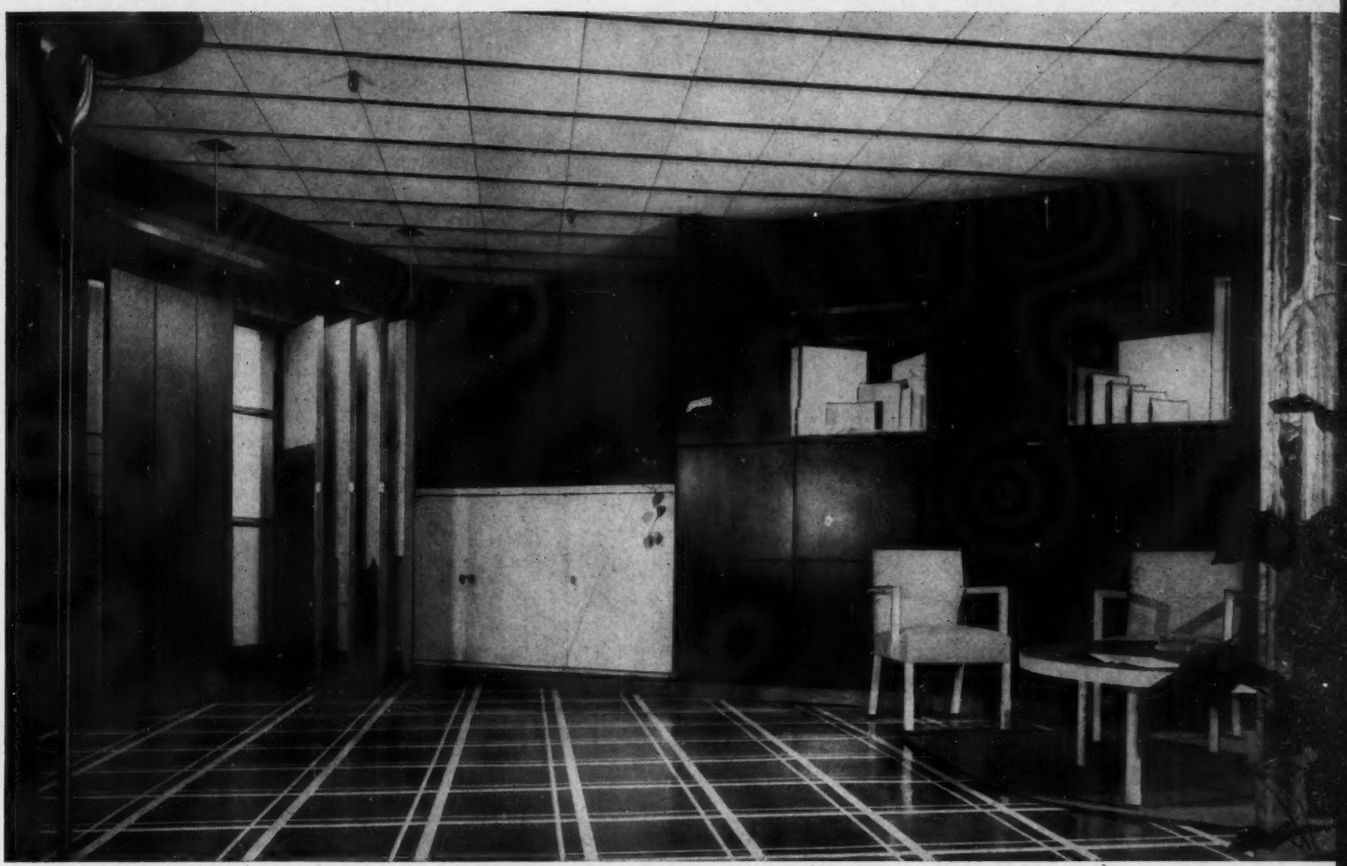
Richard Garrison

SHOWROOMS FOR BUILDING MATERIALS AND GLASS AND CLOSURE DIVISIONS, SEPARATED BY A CORRUGATED GLASS SCREEN, ARE ADJACENT TO THE MAIN SHOWROOM. NOTE THE ARCHITECT'S SKETCHES BELOW



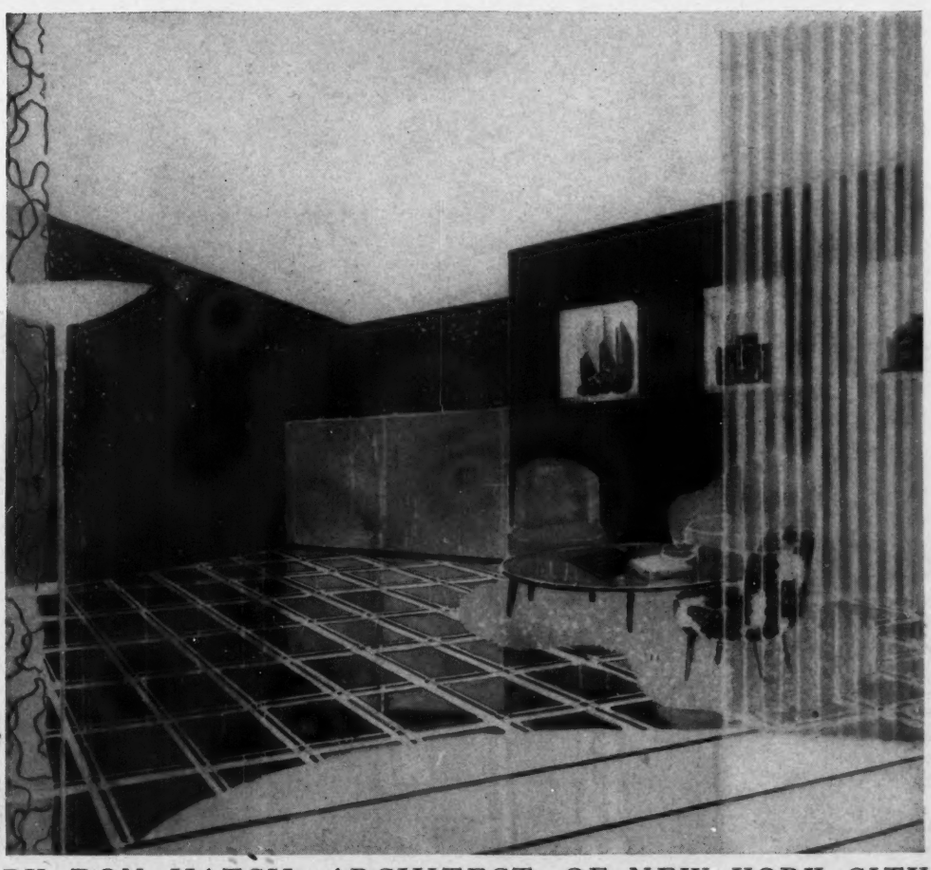
Louis H. Dreyer

ARMSTRONG CORK COMPANY SHOWROOMS AND NEW YORK OFFICES



Richard Garrison

WALL FINISHES ARE ARRANGED IN NESTS OF CONCEALED DOORS, PROVIDING MAXIMUM DISPLAY AREA. GLASS WALL CASES DRAMATIZE A VARIETY OF BUILDING PRODUCTS



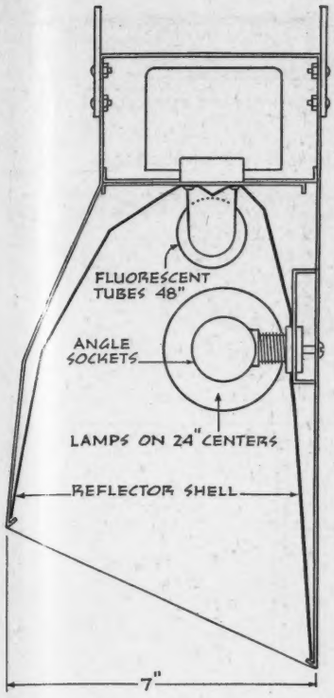
Louis H. Dreyer

BY DON HATCH, ARCHITECT, OF NEW YORK CITY

THE SALESMEN OF THE FLOOR DIVISION ARE SEPARATED FROM THE SHOWROOM ONLY BY A PLATE GLASS WALL. PIN-STRIPE FLOOR PATTERN IS CARRIED THROUGH THE TWO AREAS TO EMPHASIZE THE RELATION. OFFICE OF THE DIVISION MANAGER ILLUSTRATES A DIGNIFIED USE OF THE ARMSTRONG PRODUCTS

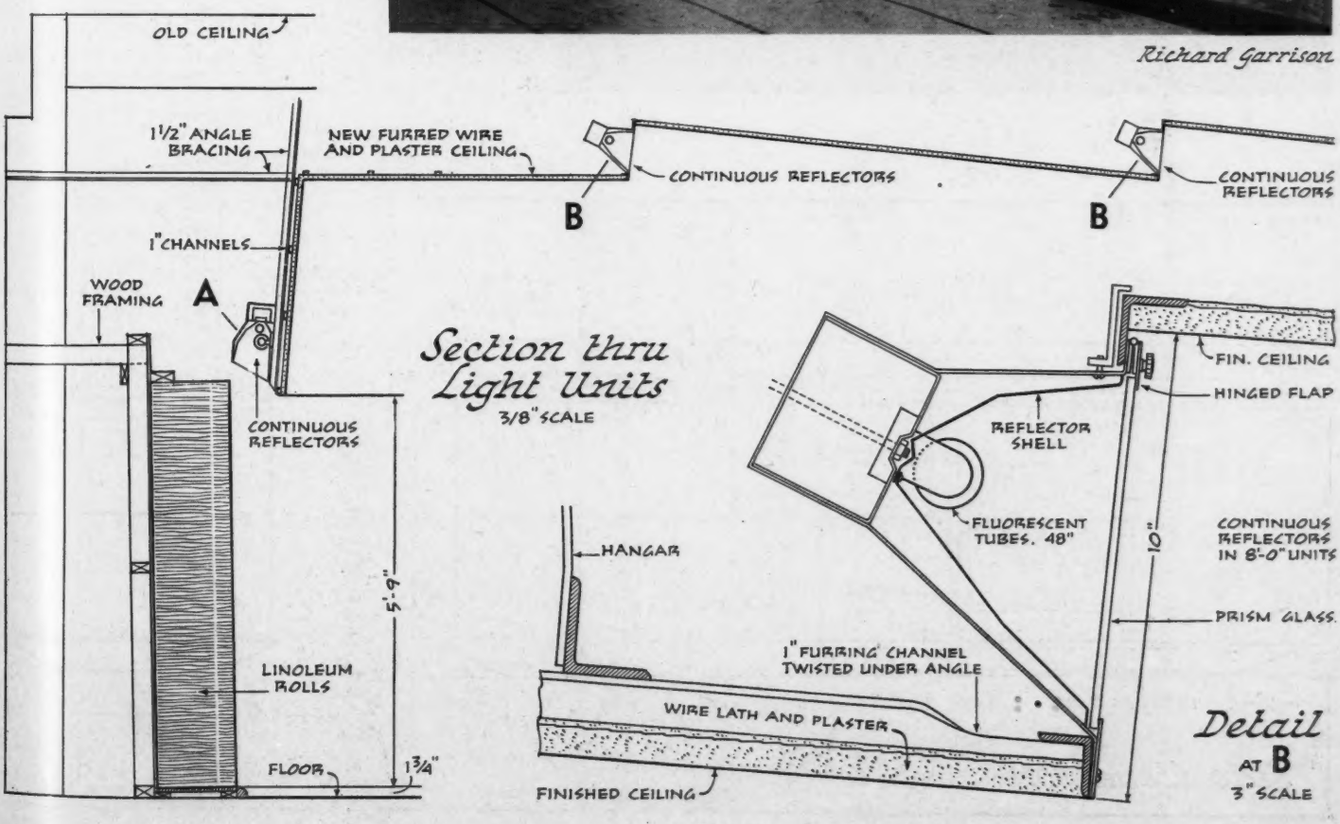
Photos by Richard Garrison

ARMSTRONG CORK COMPANY SHOWROOMS AND NEW YORK OFFICES



Detail AT **A**
3" SCALE

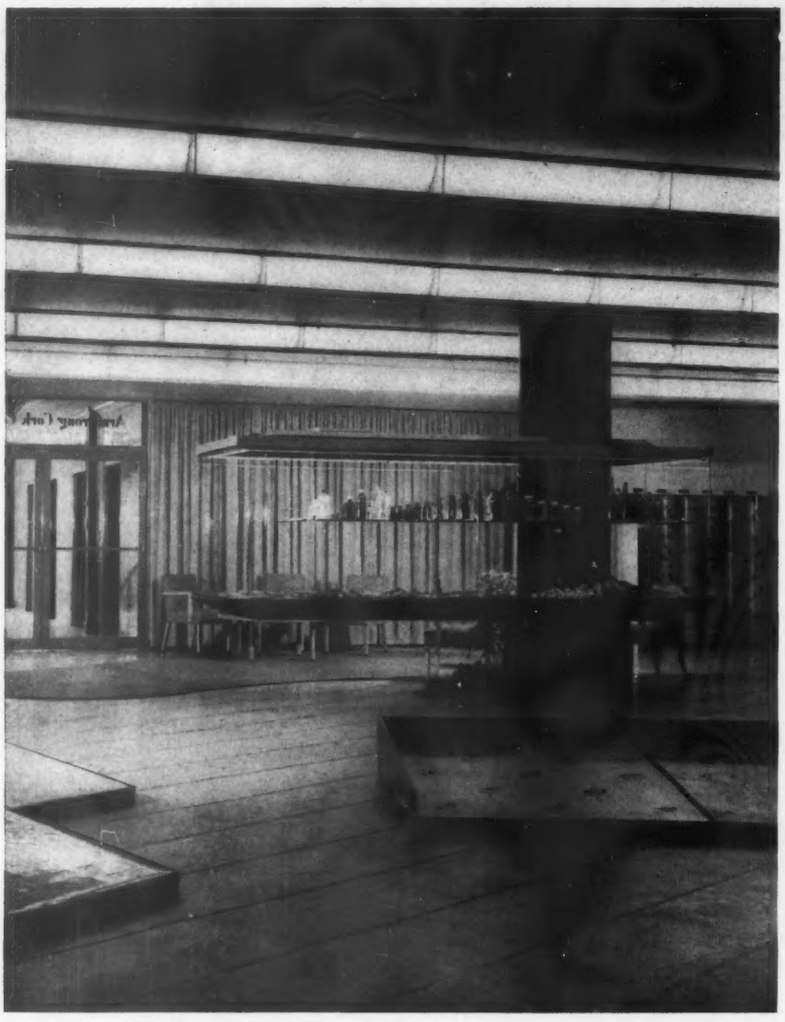
Richard Garrison



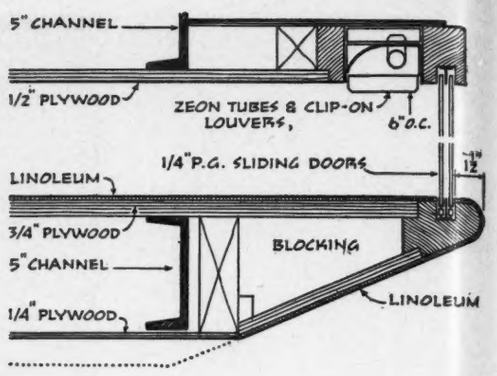
Section thru Light Units
3/8" SCALE

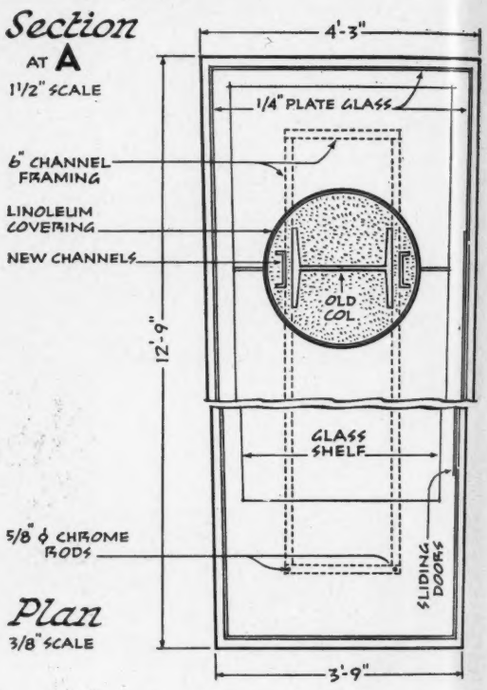
Detail
AT **B**
3" SCALE

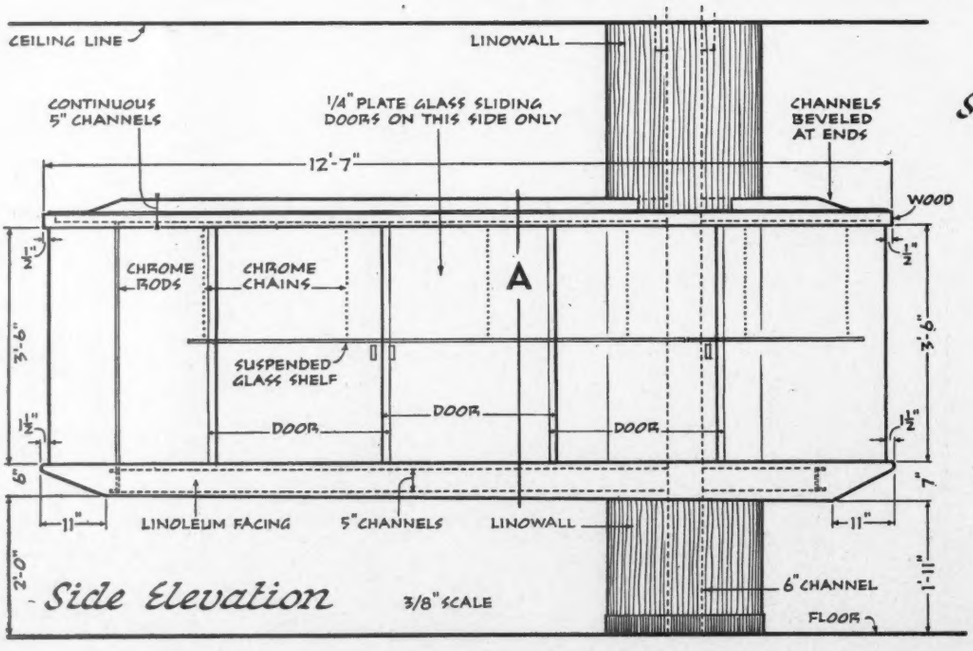
DESIGNED BY DON HATCH, ARCHITECT, OF NEW YORK CITY

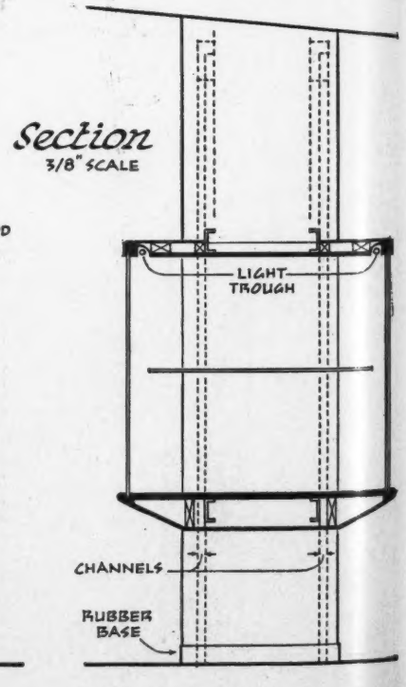


Richard Garrison









ARMSTRONG CORK COMPANY SHOWROOMS—BY DON HATCH

CONTRA-VERSUS

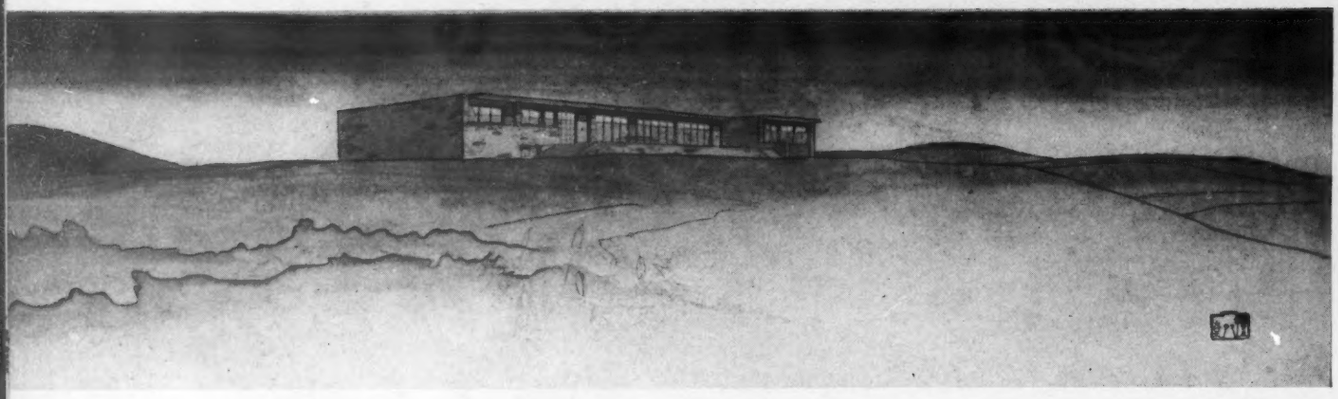
TWO ARCHITECTURAL LEAGUE EXHIBITIONS

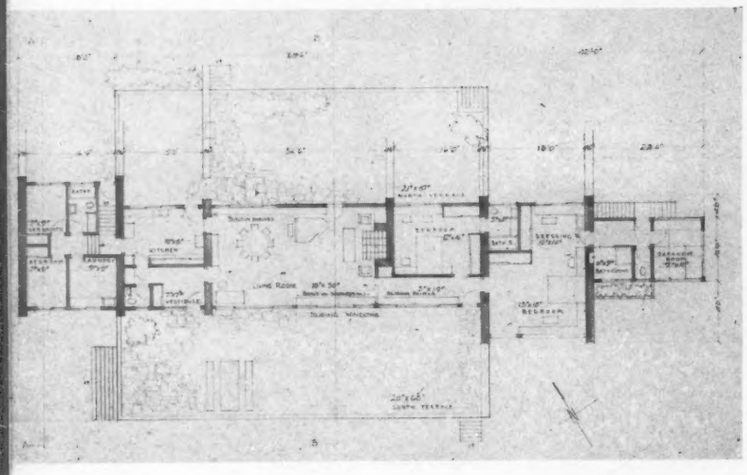
BY TALBOT F. HAMLIN

Again the Architectural League has come to the rescue of the profession with two coincidental architectural exhibitions: the first, in the downstairs rooms, a so-called "Panel Show," put together by a few League members; the other, upstairs, an exhibition of the work of a selected group of the younger architects called "40 Under 40," arranged in cooperation with the *Architectural Forum.* Thus, again, it has in the combined shows produced another version of the "Versus" show, with the emphasis for the separation on age rather than style.

This differentiation on the basis of age seems even more artificial and less important than the differentiation on style. Creative ability in architecture is no prerogative of any age group. It is, of course, important and worthwhile to see what the younger designers are creating. As a mere news item, "40 Under 40" is interesting, but as a show possessed of some special and, as it were, esoteric significance such as is suggested by the captions lettered at the entrance it is a disappointment. After all, Frank Lloyd Wright is over seventy and, alas, there are hundreds of *young* architects throughout the country doing as unthinkingly conservative and opportunistic work as any which their elders produce. If we find today much of the most significant American architecture done in the fields of hospital, school, and industrial work—one thinks, for instance, of the new Queens Tuberculosis Hospital or the new building of the Massachusetts General, of any number of western schools, of Hunter College, of the magnificent dams and powerhouses of the TVA—one almost necessarily finds little of it in the "40 Under 40" group, which is seemingly directed toward the individual private house field, with but few exceptions. Moreover, the issue is still further confused by the problem of partnerships. Several of the exhibits in the "40 Under 40" show are really the work of partnerships in which one member happens to be within the required age limitations. Who can say to what part of the partnership the particular design shown is due? When the designing groups become very large, as in the case of some of the housing shown, the question is even more obscure.

This almost inevitable confusion of aims is apparent in the exhibitions themselves. There is, as might be expected, in the "Panel" show more work of a purely conventional type than in the work upstairs. Nevertheless, there are in it also such outstanding pieces of modern design as Aymar Embury's superb Bronx-Whitestone Bridge, which in its marrying of constructive daring and æsthetic elegance is one of the truly notable modern buildings of America. Electus Litchfield shows photographs of the Yorkship housing of twenty-two years ago. Despite the Colonialesque quality of the detail, it reveals a grasp of basic composition, a power of design in its relation of streets and buildings and village square, and a feeling for what makes up pleasant and harmonious community living that few of our modern housing developments have achieved. Certainly, if we accept its style as the natural expression of its time, it makes





PERSPECTIVE AND PLAN OF "CLOVER TOP FARM" DESIGNED BY ANTONIN RAYMOND MADE ONE OF THE MOST INTERESTING EXHIBITS IN MARCH'S "PANEL SHOW" AT THE ARCHITECTURAL LEAGUE. PHOTOS OF THE EXHIBITS BY LOUIS H. DREYER

the crowded and confused plan of Vladeck Houses shown in the exhibit upstairs seem backward and discouraging!

Similarly, the "Panel" show contains Morris and O'Connor's charming Westchester County Home, a good example of the simplest kind of brick suburban institutional design, remarkably fresh and modern and delicate in its detail; also their clear, clean interior of the Berkshire Art Museum in Massachusetts. And there is in the "Panel" show one of the most simple and yet distinguished of the house designs: Antonin Raymond's Clover Hill Farm, with its clear transverse web walls and masonry—the exterior walls between largely of glass—and especially its imaginative and brilliant handling of the bedroom elements.

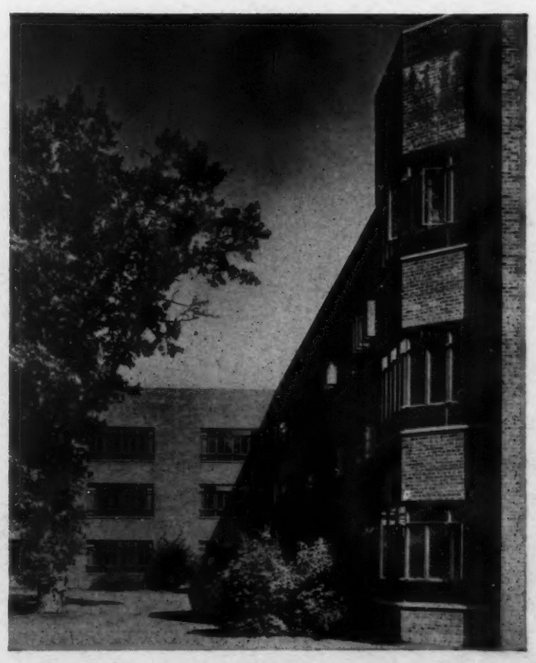
There are qualities, however, which do come out in the work of the younger men, seen as a whole, which, taken together, form an architectural picture of great interest and rich promise. There is noticeable, first of all, an almost total absence of stylisms of any kind. This is an important fact. Any such show given five years ago, and even the "Versus" show of last year, disclosed again and again a strong European influence, a definite use of what might roughly be called "International Style" elements. Behind them loomed a real danger of the premature crystallization of a style based primarily on LeCorbusier and the Bauhaus—a danger similar to that which Lurçat pointed out as facing the development of French architecture a few years ago. In the present exhibition there is not a trace of this. One can pick up here and there, to be sure, the influences of certain recent architects—of Wright in the work of Alden Dow, of Van der Rohe in the projects of Rodgers and Priestley and of Howard Dearstyne—but, generally speaking, the impression which the exhibition produces is one of the freest type of creative activity searching for forms directly expressive and not borrowed. If there is occasionally a certain confusion, it is the confusion of honest inquiry and not the confusion resulting from ill-applied borrowed forms.

The second characteristic which is obvious is the growing sensitiveness and skill of the architects in the handling of American materials, and especially of wood. Partly, of course, this may arise from the number of small houses which, as has been pointed out, such an exhibit necessarily contains. Yet,

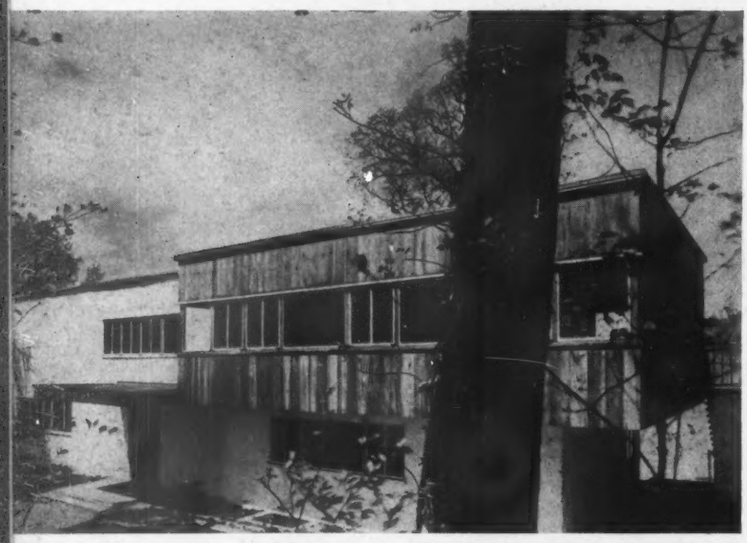
even if this is so, it is encouraging to find these architects developing from this most common of country house materials forms so expressive, textures and surfaces so pleasant, compositions so obviously natural. In this development the influence of the work of the past few years on the Pacific Coast is apparent. The West Coast designers in this field are recognized as the leaders; their published work has excited among architects almost universal admiration, and it is not strange to find young men in the rest of the country deeply impressed. But the interesting thing about this exhibition is the fact that there has been little direct copying. Regional peculiarities, fortunately, are still strong. Climate and tradition (in the true sense of the word) make eastern houses different from those of the Middle West, and these in turn different from the buildings on the Pacific Coast, even though in all of them the desire for the best possible treatment of wooden construction and finish is evident.

Van der Gracht and Kilham's Hinton House at Putney, Vermont, of which a model is shown, is typical. It somehow seems to me definitely New England; its handling of sloped roofs, of walls and windows, though fresh, modern, and creative, one feels as definitely within an eastern and not a western tradition. Again, Beatty and Strang's simple wooden house belongs in the Middle

FRANK LLOYD WRIGHT'S INFLUENCE IS SEEN IN THE C. A. CAMPBELL HOUSE BY ALDEN DOW (ABOVE). MORRIS & O'CONNOR WERE THE ARCHITECTS OF THE BERKSHIRE MUSEUM (LEFT, BELOW) AND WESTCHESTER COUNTY HOME (RIGHT, BELOW)



HARWELL HARRIS'S LATEST HOUSE, ON A HILLSIDE IN BERKELEY, IS ALREADY A LANDMARK



COMMUNITY PLAY SCHOOL, OSCAR G. STONOROV

WALTER PHILLIPS HOUSE, STONOROV & BACON

West, just as the houses of Hervey Clark, Harwell Harris, and John Funk seem indigenous to the steep slopes and the climate of the western shores. The almost erratic yet interesting shapes of Stonorov's Community Play School and his Phillips House at Torresdale are also at home in their location.

There is thus evident, it seems to me, a definite trend toward regional types of design in America today; and this must, I believe, be the case in a country as large as ours, where living ways and climates, sites and building methods are so various. If it is part of the basis of contemporary architecture to work closely for site harmony, to develop functionally from ways of life, to express frankly construction techniques, regionalism must unavoidably develop, and the evidence of it in these designs is a manifestation to me of architectural health.

Certain extreme theorists of the International Style used to claim that any consideration of site was per se "romantic" (whatever that might mean) and as such to be condemned, as though some kind of transcendental geometry could supersede the relationships of a building and the land on which it stands! Apparently young America will have none of this extremism.

The third quality which I see represented in the best of the "40 Under 40" show is a growing ability to conceive a building realistically as a construction in three dimensions, envisaged not as plan, elevation, and section, but as a series of changing views and interestingly related spaces of various types—a disappearance, in other words, of the entire concept of paper architecture. Over and over again, plans and elevations of these buildings would be of themselves almost meaningless unless one were possessed of that particular ability to visualize what these diagrams meant in actual built form. Even on such a constricted problem as that of the city house this is evident. Hamby and Nelson's Fairchild House on East 65th Street, for example, with its building divided into two portions by an interior court and ramps connecting the two sides, almost demands a model to be rendered understandable. Sim-

THE GOODYEAR RESIDENCE AT OLD WESTBURY, LONG ISLAND, DESIGNED BY EDWARD D. STONE

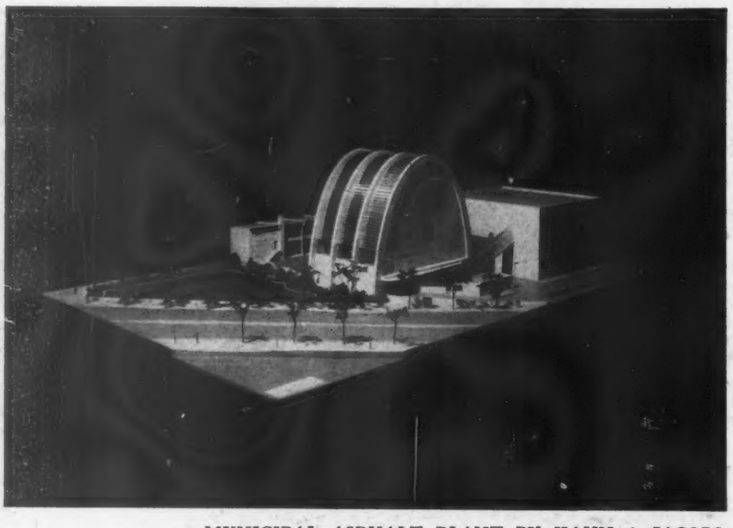
ilarly, Edward Stone's Goodyear House and the fantastic creations of Alden Dow are three-dimensional compositions of exterior and interior elements all related—but with relations many of which are hard to read in the mere diagrams.

The fourth quality, and perhaps the most important of all, is a vivid, almost impatient ease in free geometrical composition—a kind of composition quite different from the fixed geometry of cubism, yet with obvious relationships to that. Simple or complex, these buildings are seen æsthetically as studied combinations of interesting geometric shapes. To this conception, it seems to me, almost everything else is secondary. It shows equally in the overelaborate eccentricities of Alden Dow's jagged office roof, in the projections of Stonorov's Play House, in the clear and simple elegance of Stone's Goodyear House.

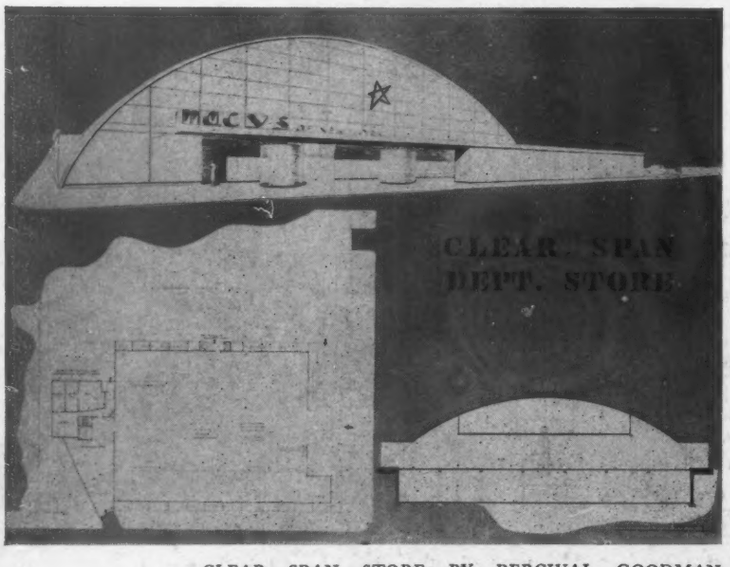
Some of the exhibits need a more detailed consideration, because in them one can see so strongly some of the merits as well as some of the dangers of present trends. The gymnasium and science building of the Farmington High School, Michigan, by Lyndon and Smith, owes its peculiar attractiveness to the perfection of its detail and its basic clarity, its use of large unbroken stretches of glass—for the laboratory windows, for instance—and the simplicity with which the whole is treated. One thinks of "elegance" in connection with such a combination of qualities.

Something of the same elegance for a building of an entirely different character is conspicuous in Stone's Goodyear House. Here the result seems to come from the most careful concentration of solids and voids as well as from the beautiful proportions of the whole and the careful study of such details as the edges of the roof eaves, the masonry copings, and the handling of the connections between differing materials. Here again, it seems to me, we are dealing with a fundamental living American tradition, which has always stood for excellence of detail; and it is encouraging to see this same quality appearing in work so fresh and new as this. One wonders whether the plan as a whole

COLLEGE LIBRARY, VAN DER GRACHT & KILHAM



MUNICIPAL ASPHALT PLANT BY KAHN & JACOBS



CLEAR SPAN STORE BY PERCIVAL GOODMAN

is as satisfactory; the search for simple geometric forms combined in new ways has led sometimes to manifest difficulties, and the shape of the library, for example, between the circular walls of the dining room and certain rectangular elements elsewhere seems hardly convincing.

Occasionally a somewhat analogous problem occurs in connection with efforts toward new uses of old materials—as, for instance, in the Log House of Alfred Clauss. He has built his walls of logs placed horizontally in the usual way, but he has notched them together very slightly at the corners so that the spaces between, apparently filled with cement, are wider than in traditional log construction. The result is a kind of horizontal striping, both outside and in, to me not altogether pleasant; and between the semirusticity of this effect and the materials and the basically sophisticated geometry of the conception there seems to be conflict.

This conflict between old and new comes out in several of the exhibits. In Smith, Emley, and Wood's Wappingers Central High School at Wappingers Falls, New York, there is evident a manifest hesitation between the safe delights of the conventional Georgian and the more difficult and rewarding search for expressive shapes. It is neither the one nor the other. It attempts some of the geometry of the new and some of the surface and detail characteristics of the old, and the two won't mix. This criticism is made with a perfect realization that it is very likely not the result of the architects' free choice, but quite probably a result forced upon them by the conservatism of the typical eastern school board. Whatever the cause, the want of success is obvious, as it is in the "Panel" show downstairs—in the interiors of the Bronx County Courthouse by Joseph Freedlander, for example, where the strife between eclectic detail and the clarity of modern forms is even more in evidence.

Perhaps it was the same problem — client trouble—coupled with the reactionary tendencies of our local FHA which has confused the otherwise charming rental housing group at Kew Gardens, designed by Snow and Titus. This low and extended group has

real beauty in general composition, and its simple brick treatment is unforced and attractive; the long curved wall with continuous windows is excellent in its effect; but elsewhere in the group there are all sorts of forced compositional elements, purely applied, setting apart different units as though they had different functions. One notices especially the use of combined windows above each other in vertical strips in one of the projecting pavilions, and everywhere the real, clear openness of the whole composition is destroyed by the blinds.

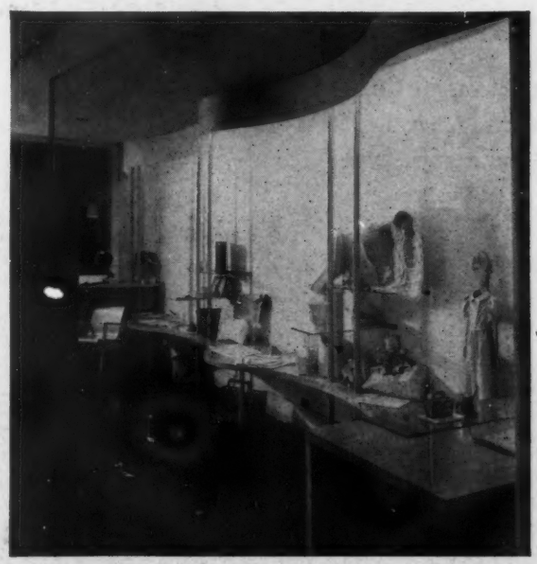
Looking at much of our recent suburban work, one sometimes wishes that the outside blind had never been invented. Why cannot our local FHA realize the enormous power in its hands for either improving or destroying architectural standards in so much residential work? In their advertisements the FHA assures owners and builders of adequate architectural service; it then goes to work and in many cases destroys the possibility of adequate architectural service by denying to the profession the opportunity of displaying its real creative genius and by forcing upon it in many cases the actual addition of silly and meaningless passementerie. Such an attitude is not necessary; in certain other parts of the country FHA offices have had different methods and ideals — they have occasionally even welcomed new solutions and new ideas. In the New York area, however, it would seem to me incumbent upon them either to change their attitude completely or else remove from their advertisements the phrase about architectural service, which their actions render meaningless.

It is a pleasure to turn from such compromises to the delightful geometrical inventions of Morris Ketchum, Jr., in the two interiors which he shows — one with wavy shelves and a wavy wall above, which syncopates the measures of the shelves below; the other with an alternation of transverse screens of veined wood, which support and decorate so beautifully the horizontal shelves which run through them.

In buildings, it is interesting to see the straightforward, well-composed, and inter-

TWO VIEWS OF THE "AMERICA HOUSE" SHOP

BY MORRIS KETCHUM, JR., AND DOROTHY DRAPER



TRADE WINDS, INC., BY MORRIS KETCHUM, JR.

CAMP BY RICHARD BENNETT AND ASSOCIATES

esting simplicity of the Winter Camp at New Milford, Connecticut, by Bennett, Bischoff, and Deskey; the nice shapes and materials of the house by Caleb Hornbostel; the unassuming rectangularity of the Koch houses near Boston; and the constructive and æsthetic brilliance of the houses of Harwell Harris. In these last, wishing for tall windows and wide cantilevered eaves, Harris has simply turned a triangular truss upside down, ceiled the under side of it, and so produced rooms of the most interesting shapes and eaves with pleasant slanting soffits and an elegant thinness at the edge. Here is construction and æsthetic effect organically and creatively related with quite simple directness. John Funk's Turner House in Berkeley is a fascinating example of site use, with its entrance court, its original plan (a development of a type becoming more and more frequent on the hillside lots of California), and general air of livable beauty.

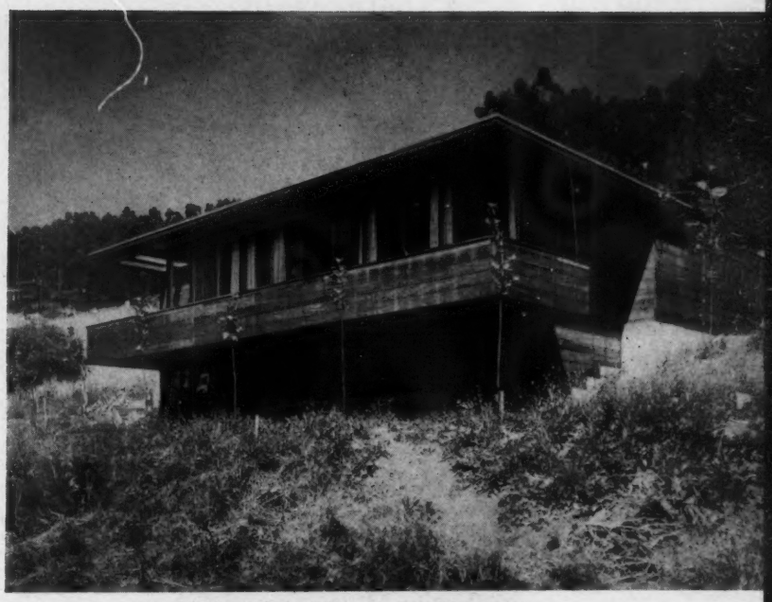
It is regrettable that more low-cost housing is not shown, and that what is shown should be well known or not particularly distinguished. The Queensbridge general plan is here—so far the best of the larger New York developments in its concentration of space and open courts, its variety of view, and its interesting community center with auditorium and kindergarten facing each other—but it is not shown in such a way as to bring out its real qualities. The bird's-eye view, like the unfortunate view of it from the Queensborough Bridge, emphasizes the amount of brick wall and prevents any conception of the real, ample size of the play and sitting courts, and any real appreciation of the actual views one has walking through the project. Vladeck Houses also are exhibited—why, it is hard to imagine. Its combination of diagonal and rectilinear shapes seems singularly inept and meaningless. It is hard to conceive the reason for it in plan; it is even harder on the site itself. Its coverage is manifestly too high, and its apparent coverage—due to the type of plan and the breaking up of all open space into absurd little unrelated areas — is even greater. Let us hope that it will not be site planning of this type which controls the work of younger architects!

The installation of the show is generally effective and simple, with little of the trickery which hurt the effect of the "Versus" show last year. One may question perhaps those somewhat grandiose blurbs lettered on the boards at the entrance; but after all one doesn't have to read them, for they have but little bearing on the actual architecture shown within. The exhibition is entered over five hurdles lettered Neighbors, Bankers (FHA), Builders, Materials, and Architects. The first, I believe, should be a higher hurdle than the others, for the problem of neighbors is a problem deeper than that of style and of modern vs. ancient; it is a matter of establishing a new sense of community harmony in architects as well as in the neighbors themselves. The education of bankers and the FHA seems a much more serious problem. As for the other three hurdles, the work within proves that the architects have gone a long way to climb them satisfactorily. In job after job the builders and materials seem quite adequate to the production of the new shapes.

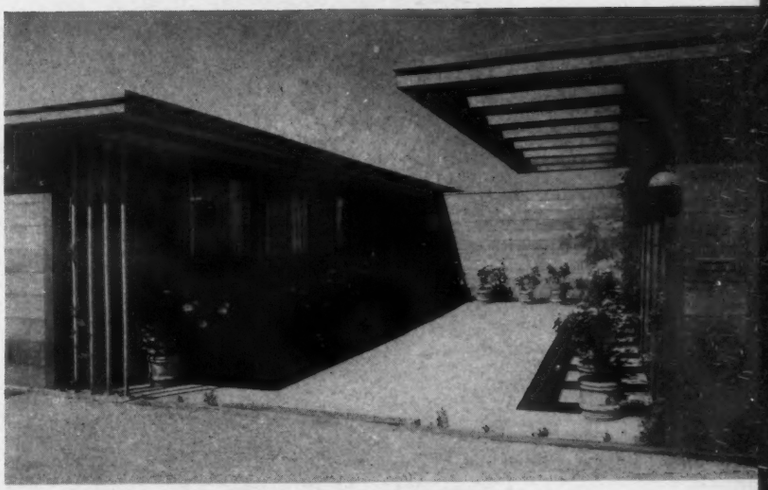
Looking at the exhibition as a whole, I am again forced to consider the danger of a new kind of paper architecture—the architecture of photographs. Sometimes it seems to me as though the development of modern photography, and especially the discovery and in-

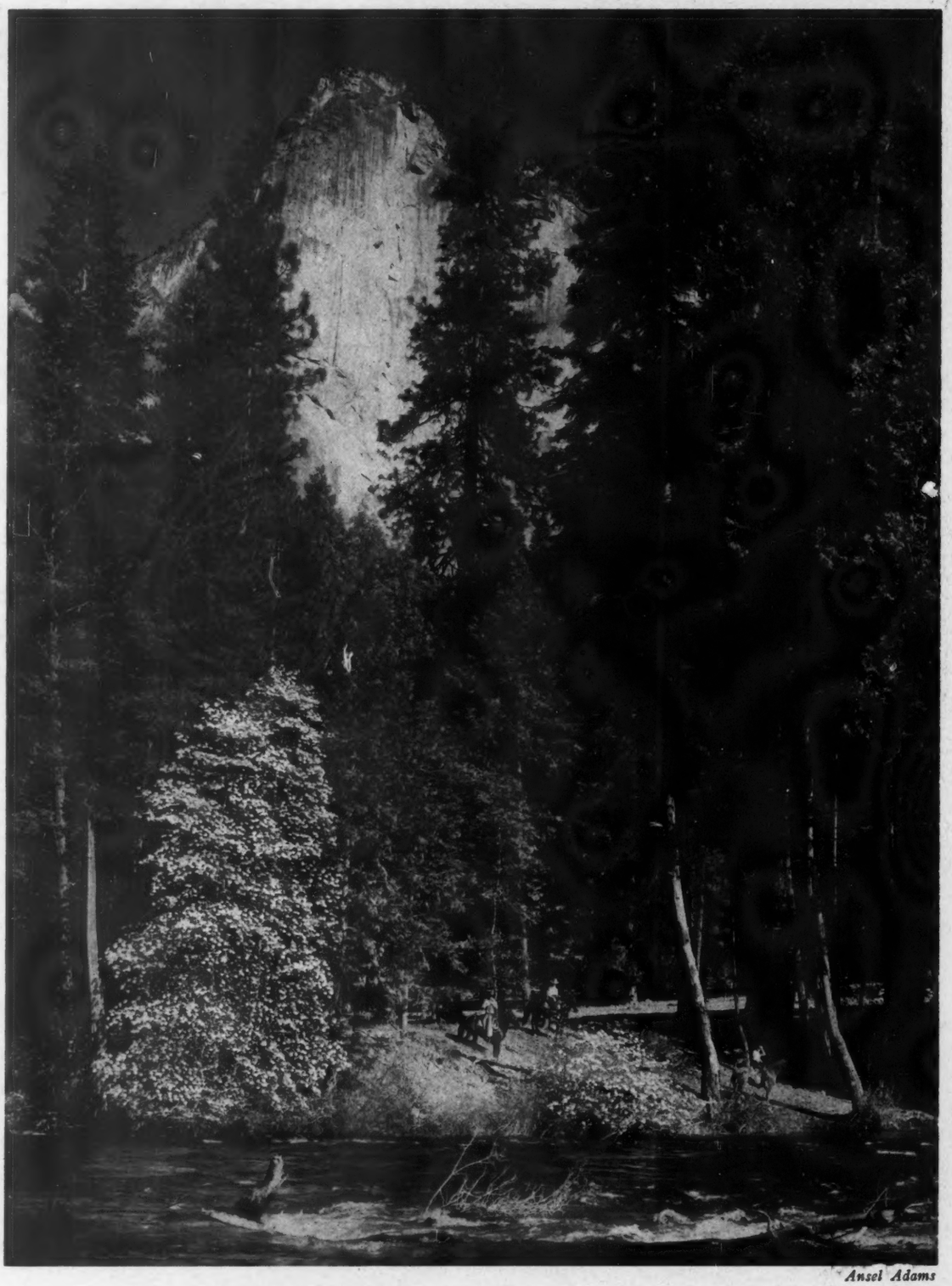
vention of the color screen, have been disastrous things for modern architecture. These dark skies, these brilliant flashing walls, come from a world that never was on land or sea. Again and again there is in the photographs a purely specious æsthetic appeal, which not only has nothing to do with architecture itself but frequently also confuses it by bringing in all kinds of false emphases of value and concealing the real effect of materials. A mechanical projector throws on a screen, near the end of the show, colored photographs of much of the work shown; a comparison of these with the brilliant blacks and whites of the monochrome photographs reveals the extraordinary difference from the actual appearance of the buildings as approximated in the colored slides. Occasionally it seems as though architects had begun to think almost unconsciously in terms of these brilliant and dramatic photos, and to design elements to produce them. I should like to see an exhibition for architects based solely on drawings of the simplest type, and an exhibition for laymen based on the same drawings plus moving pictures taken without benefit of trick photography or strange points of view or overdark color screens, showing the experience of one who approaches the building, walks around it, and goes through it, with continual flashbacks to the drawings so that they would begin to have a meaning for the layman.

We should, of course, have more architectural exhibitions of all kinds. We need repeatedly to put before ourselves as architects an opportunity to know and to study what American architects are actually producing, and to put before the layman a graphic story of the architect's contribution to modern life. They should be of all kinds: some merely news shows to give an impression of the actual quantitative amount of work and an opportunity to evaluate its total impact; those taken from all points of view to bring out specialized attitudes; and some with the highest possible standards æsthetically—to be shown in which would be considered a great honor. The how and why and where is obviously the difficulty. Is it insoluble?



THE JAMES O. TURNER HOUSE BY JOHN FUNK





Ansel Adams

THE DOGWOOD WILL BE IN BLOOM WHEN MEMBERS OF THE A.I.A. ASSEMBLE IN YOSEMITE VALLEY, CALIFORNIA, NEXT MONTH FOR THE 73RD ANNUAL CONVENTION OF THE INSTITUTE. ALL MEMBERS OF THE PROFESSION AND THEIR FAMILIES, TEACHERS AND STUDENTS OF ARCHITECTURE, PRODUCERS' COUNCIL MEMBERS AND OTHER FRIENDS OF THE PROFESSION WILL BE WELCOMED. PLANS FOR THE CONVENTION ARE BEING COMPLETED BY THE CONVENTION COMMITTEE, HEADED BY DAVID J. WITMER, OF LOS ANGELES, IN COOPERATION WITH THE NORTHERN AND SOUTHERN DIVISIONS OF BOTH THE INSTITUTE AND THE CALIFORNIA STATE ASSOCIATION. THE CONVENTION WILL BE HELD MAY 17-19 IN YOSEMITE, AND IN LOS ANGELES MAY 21. THE VISITING ARCHITECTS WILL BE ENTERTAINED MAY 26 IN SAN FRANCISCO

PENCIL POINTS DATA SHEETS

Prepared by DON GRAF, B.S., M.Arch.

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MANY prominent manufacturers have had their products *data-ized*. Manufacturers' *Data Sheets* consist of information which is identical in format and method of presentation with the PENCIL POINTS series. These manufacturers' *Data Sheets* describe basic principles in typical Don Graf de-bunked style—they contain no sales talk for the products. They are indexed to fit into the filing plan of the *Data Sheet Notebook*.

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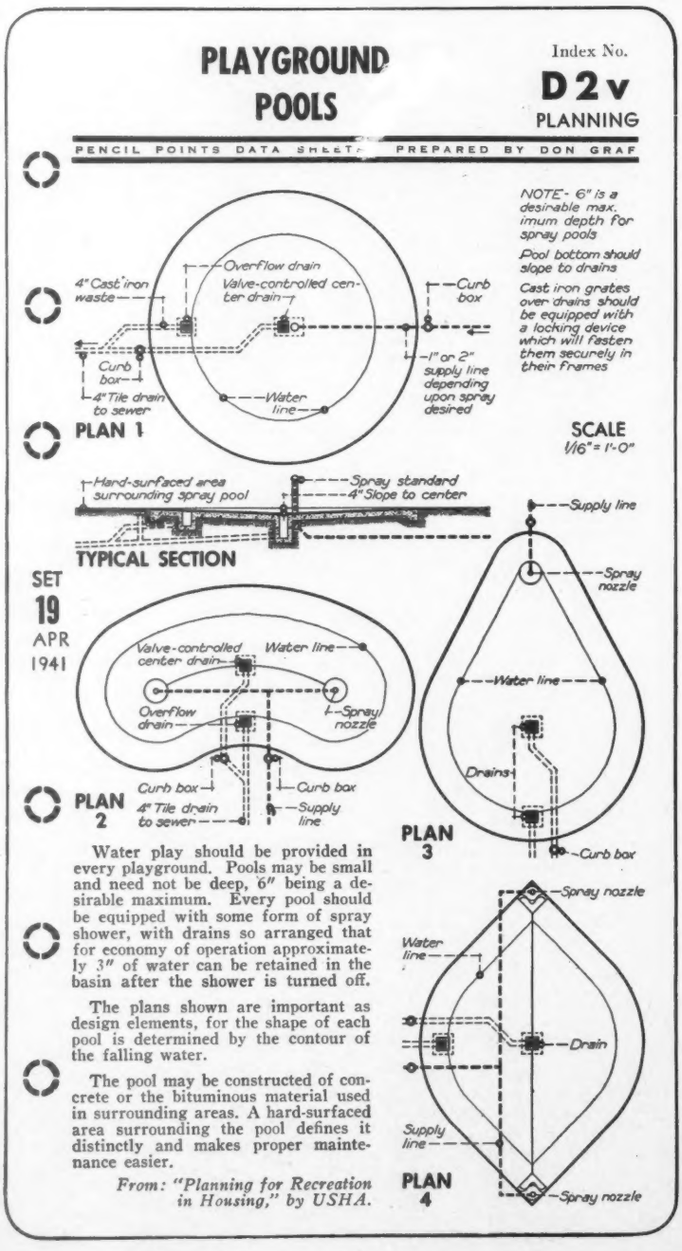
PLAYGROUND POOLS
Index No.
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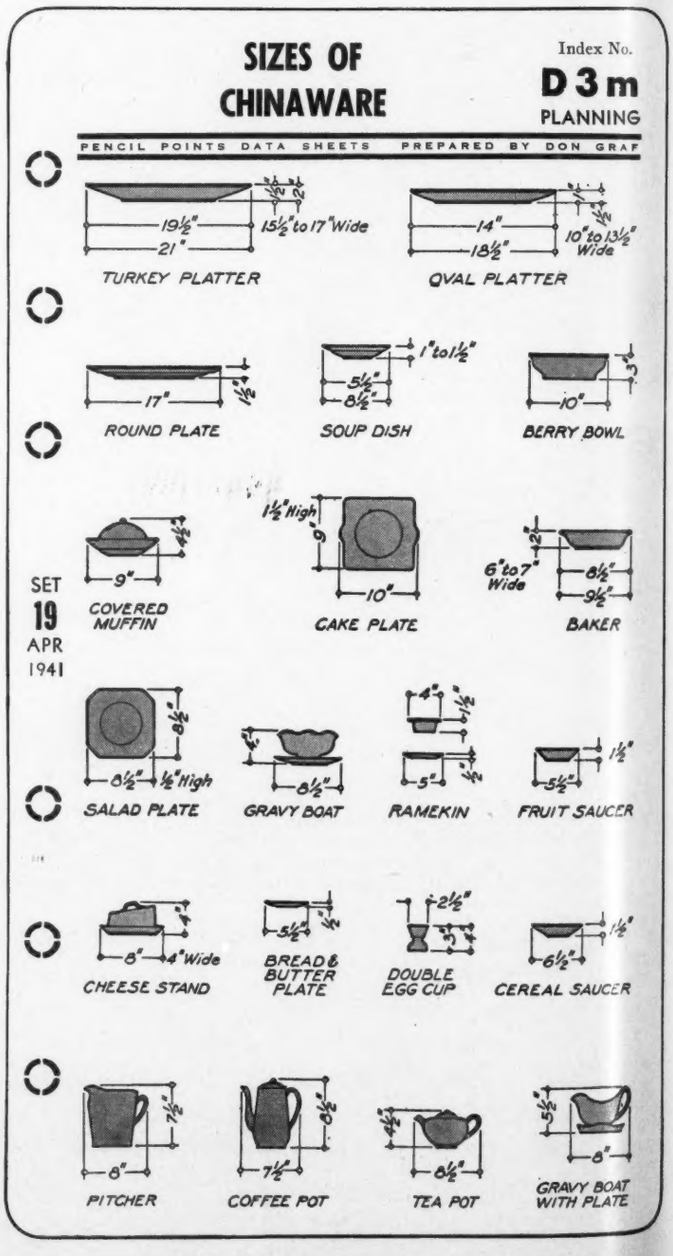
PLANNING
PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF
NOTE- 6" is a desirable max. imum depth for spray pools
Pool bottom should slope to drains
Cast iron grates over drains should be equipped with a locking device which will fasten them securely in their frames
4" Cast iron waste
Overflow drain
Valve-controlled center drain
Curb box
Curb bar
4" Tile drain to sewer
Water line
1" or 2" supply line depending upon spray desired
PLAN 1
SCALE 1/16" = 1'-0"
Hard-surfaced area surrounding spray pool
Spray standard 4" Slope to center
TYPICAL SECTION
SET 19 APR 1941
Supply line
Spray nozzle
Valve-controlled center drain
Water line
Overflow drain
Spray nozzle
Curb box
4" Tile drain to sewer
Supply line
PLAN 2
Water line
Drains
Curb box
PLAN 3
Water line
Spray nozzle
Drain
Supply line
Spray nozzle
PLAN 4
Water play should be provided in every playground. Pools may be small and need not be deep, 6" being a desirable maximum. Every pool should be equipped with some form of spray shower, with drains so arranged that for economy of operation approximately 3" of water can be retained in the basin after the shower is turned off.
The plans shown are important as design elements, for the shape of each pool is determined by the contour of the falling water.
The pool may be constructed of concrete or the bituminous material used in surrounding areas. A hard-surfaced area surrounding the pool defines it distinctly and makes proper maintenance easier.
From: "Planning for Recreation in Housing," by USHA.



The Electric Storage Battery Company, 19th and Allegheny, Philadelphia, Pa. Seven *Data Sheets* on the selection of proper units for emergency lighting of hospitals, theaters, banks, stores, etc.

Elkay Manufacturing Co., 4704 W. Arthington Street, Chicago, Ill. Originally 6 *Data Sheets* to which 2 supplementary sheets have been added, on standard and custom-built stainless steel kitchen sinks and cabinet tops.

Michael Flynn Manufacturing Co., Allegheny Avenue and Tulip Street, Philadelphia, Pa. A set of 8 *Data Sheets* on the famous Lupton residential casements—first *Data Sheets* on steel windows.

The Hart Manufacturing Company, Hartford, Conn. Eight *Data Sheets* on the control of large electrical loads by a simple hand switch, time clock, thermostat, photo-electric cell or other device.

Hoffman Specialty Company, Inc., 500 Fifth Avenue, New York, N. Y. Eight *Data Sheets* outlining the advantages and shortcomings of various types of steam heating systems.

Holland Furnace Company, Holland, Mich. A new set of 7 *Data Sheets* describing 2 systems of Holland heating, outlining the design process for warm air heating systems. This set supersedes an earlier set of Holland *Data Sheets.*

The Imperial Brass Mfg. Co., Chicago, Ill. A recently revised set of 4 *Data Sheets* fully describing the installation and operation of the "Floatless" Automatic Electric Sump Pump and Cellar Drainer.

Independent Protection Company, Inc., 1507 S. Main Street, Goshen, Ind. Four *Data Sheets* describing the protection of buildings against lightning, with construction drawings.

Koppers Company, Koppers Building, Pittsburgh, Pa. Twelve *Data Sheets* on dampproofing, roofing, with construction drawings on the waterproofing of pools.

Marsh Wall Products Company, Dover, Ohio. Four *Data Sheets* covering Marlite—a light-weight, easily installed and completely sanitary wall covering which is available in many attractive colors.

Milcor Steel Company, Milwaukee, Wisc. A set of 6 *Data Sheets,* on the Milcor Steel Stud for Hollow Partitions and Milcor 2" Solid Plaster Partitions.

National Electric Products Corporation, Fulton Building, Pittsburgh, Pa. A set of 6 *Data Sheets* which cover the latest development in Plug-in Strips for convenience outlets and Lumiline lighting. Carefully made drawings show exact installation for various typical locations.

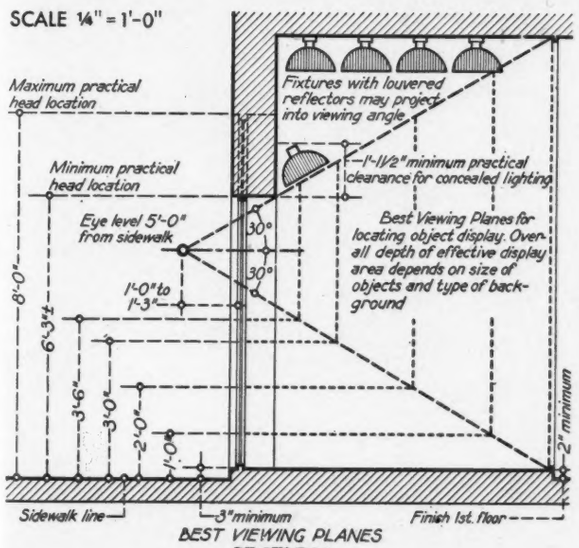
(Continued on page 266)

SHOW WINDOW DESIGN PRINCIPLES

Index No. **D 12 o** PLANNING

PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF

SET 19 APR 1941



BEST VIEWING PLANES
SECTION

BEST VIEWING PLANES. On *Data Sheets* D12j, D12k and D12l are given average dimensions for store fronts of various types. The height of the bulkhead and the depth of the show window are given in these dimensions. In general, the smaller the objects are which must be displayed, the higher the bulkhead becomes and the shallower the display space becomes — to bring the objects closer to the observer's eye. Large objects such as automobiles and house furnishings will have a very low bulkhead and a relatively deep display area. In the diagram above is shown a method of locating the most favorable viewing plane for locating the objects on display. Obviously, the show-window back should be located sufficiently in the rear of this plane to furnish a proper background.

SIGHT LINES. The normal cone of human vision is approximately 60° — 30° in all directions from the optical center. Eye levels have been incorrectly suggested in various printed articles as 5'-3". Consumer Research says that women influence the majority of retail purchases so a 5'-3" sight line is incorrect as an average for prospective buyers. An eye level of 5'-0" or even 4'-10" more closely approximates true conditions. For bulkheads of various heights, the optimum viewing plane will be found at the intersection of the floor and the sight lines.

Courtesy Libbey-Owens-Ford

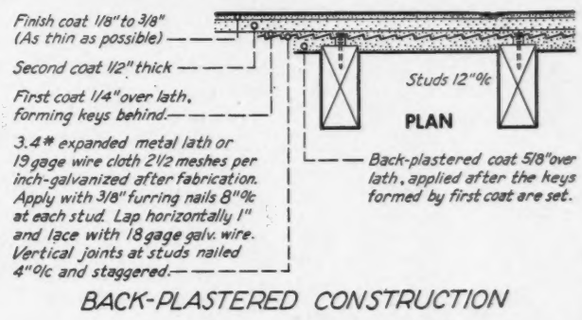
CORRECT STUCCO CONSTRUCTION

(See F11a also)

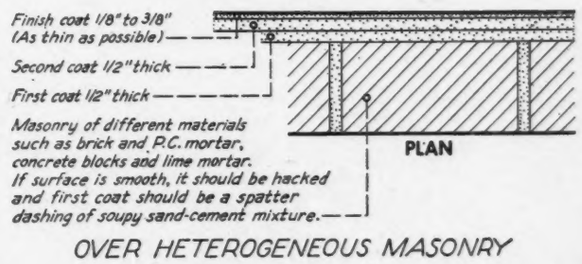
Index No. **F 11 g** CONSTRUCTION

PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF

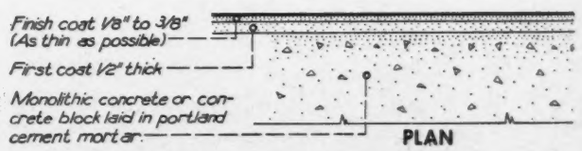
SET 19 APR 1941


Finish coat 1/8" to 3/8" (As thin as possible)
Second coat 1/2" thick
First coat 1/4" over lath, forming keys behind.
3.4# expanded metal lath or 19 gage wire cloth 2 1/2 meshes per inch-galvanized after fabrication. Apply with 3/8" furring nails 8" o/c at each stud. Lap horizontally 1" and lace with 18 gage galv. wire. Vertical joints at studs nailed 4" o/c and staggered.
Studs 12" o/c
PLAN
Back-plastered coat 5/8" over lath, applied after the keys formed by first coat are set.

BACK-PLASTERED CONSTRUCTION


Finish coat 1/8" to 3/8" (As thin as possible)
Second coat 1/2" thick
First coat 1/2" thick
Masonry of different materials such as brick and P.C. mortar, concrete blocks and lime mortar. If surface is smooth, it should be hacked and first coat should be a spatter dashing of soupy sand-cement mixture.
PLAN

OVER HETEROGENEOUS MASONRY


Finish coat 1/8" to 3/8" (As thin as possible)
First coat 1/2" thick
Monolithic concrete or concrete block laid in portland cement mortar.
PLAN

Three coat work should always be used except on masonry walls of homogeneous materials, which present a true, even, clean, sound surface, where the second or leveling coat may be omitted.

Where the wall surface is too smooth to provide proper bond it should be hacked and dashed with a coat of soupy sand-cement mixture.

Due to its rough texture and the similarity of its composition to that of stucco, concrete masonry is well adapted as a stucco base.

OVER HOMOGENEOUS MASONRY

National Lightning Protection Co., Jefferson at Eugenia, St. Louis, Mo. Four *Data Sheets* giving a complete open specification for the lightning protection of various buildings.

National Terrazzo & Mosaic Association, 1420 New York Avenue, N. W., Washington, D. C. A set of 8 *Data Sheets*, giving short form specification and details for all kinds of terrazzo work.

Norton Lasier Company, 466 West Superior Street, Chicago, Ill. The operation and installation of concealed door closers are clearly and succinctly described in a set of 8 *Data Sheets* which are now in preparation. Watch for the announcement advertisement in PENCIL POINTS.

Pecora Paint Company, 3501 N. 4th Street, Philadelphia, Pa. A set of 4 *Data Sheets* on the use of calking compounds, dampproofing, mortar stains, waterproofing and mastic setting of structural glass and acoustical tile.

Rotary Lift Company, Memphis, Tennessee. A set of 6 *Data Sheets* with very complete installation drawings showing details of Freight-Passenger Elevators, Sidewalk Elevators and Dumbwaiters for travels of 30 feet or less.

The Ruberoid Company, 500 Fifth Avenue, New York, N. Y. Six *Data Sheets* giving a complete outline of both pitch and asphalt roofings for all types of roofing decks.

Scott Paper Company, Chester, Pa. Facts on washroom planning never before in print. You should have these 8 *Data Sheets* to complement the data printed in PENCIL POINTS on fixtures and design of washrooms.

The Sisalkraft Company, 205 W. Wacker Drive, Chicago, Ill. Six *Data Sheets* which tell you how to use 3 kinds of Sisalkraft for better construction.

The Sisalkraft Company, 205 W. Wacker Drive, Chicago, Ill. A set of 6 *Data Sheets* showing details of 6 uses for Sisalkraft, which complement the first set of Sisalkraft *Data Sheets*.

The Stanley Works, New Britain, Conn. Four *Data Sheets* on the construction of garage doors and doors operated by photo-electric cells.

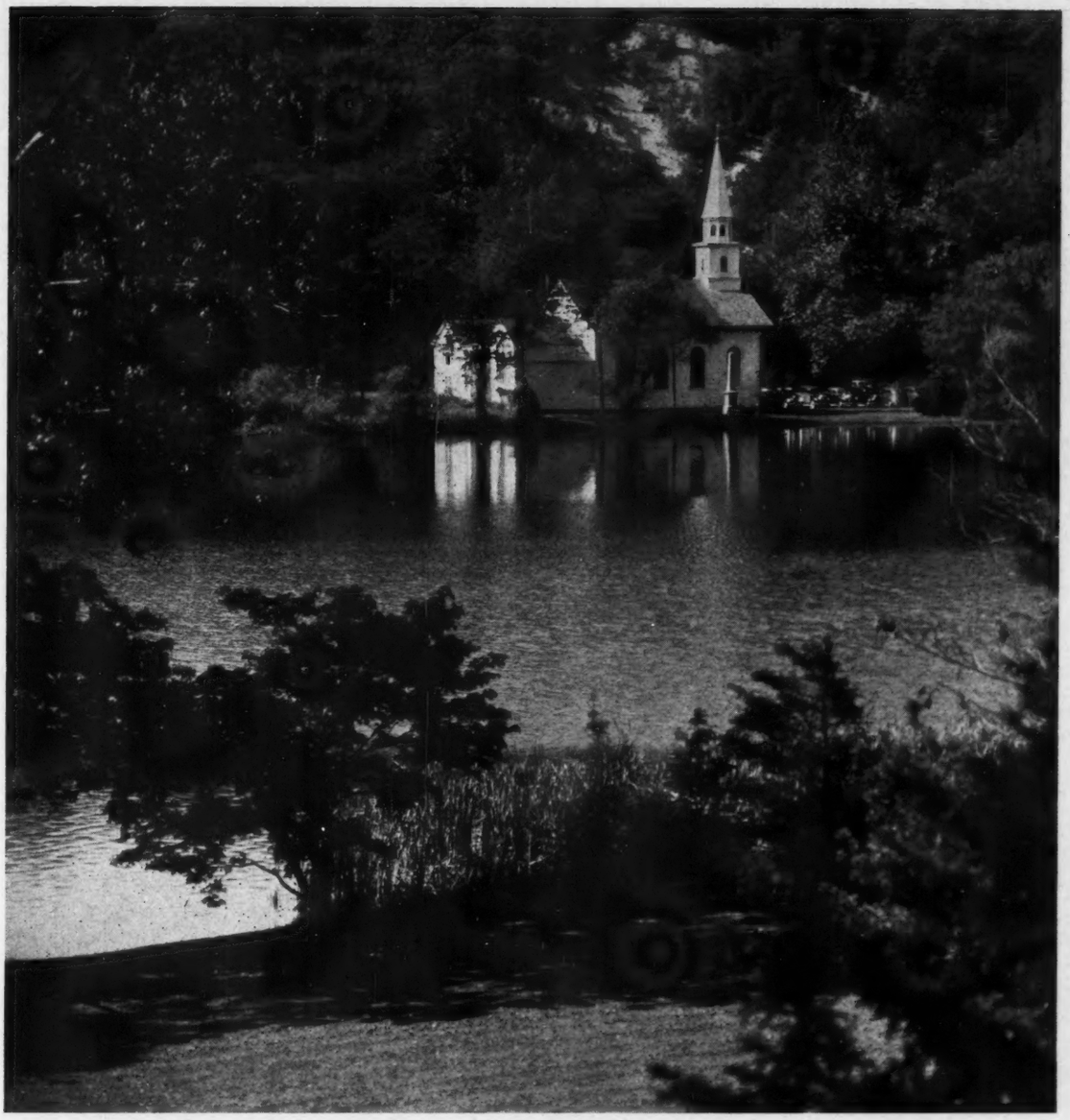
The Stanley Works, New Britain, Conn. Second set of 4 *Data Sheets* on school wardrobes, accordion doors and the location of butts for ordinary doors.

The Stanley Works, New Britain, Conn. Third set of 4 *Data Sheets* on the planning of closets—either wide shallow closets or deep narrow closets—together with dimensions of fixtures, coat hangers, men's and women's clothing.

Timber Engineering Company, 1337 Connecticut Avenue, N. W., Washington, D. C. Now in preparation and available soon, a set of 6 *Data Sheets* describing a standard termite shield with a patented solderless connector.

Henry Weis Mfg. Co., 941 Oak Street, Elkhart, Indiana. A set of 6 *Data Sheets* describing unit shower stalls for residences, society buildings, schools, etc.

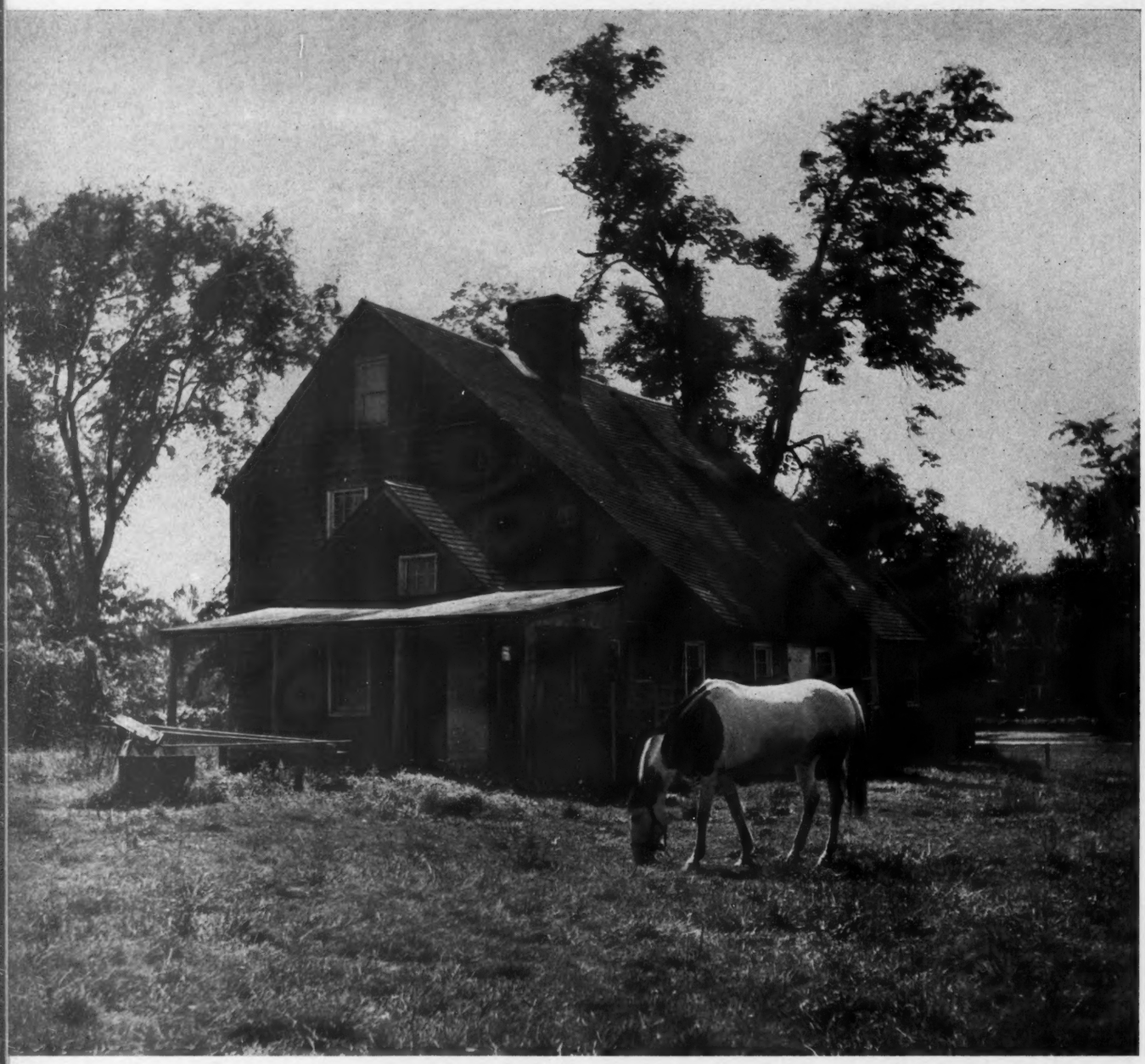
The Yale & Towne Mfg. Co., Stamford, Conn. These *Data Sheets* are temporarily out of print during a revision. Write now to reserve a set of these 4 *Data Sheets* when ready. They describe the Phantom Doorman and the necessary provisions for economical installation.



LONG ISLAND STUDIES

BY TET BORSIG

EARLY SETTLERS OF THE EASTERN END OF LONG ISLAND WERE STRONGLY INFLUENCED BY THE SCENES OF THEIR NATIVE ENGLAND, IF WE ARE TO JUDGE BY THE HISTORIC BUILDINGS OF THAT SECTION PICTURED HERE BY TET BORSIG, OF NEW YORK. THE BEAUTY OF THE REMOTE PORTIONS OF LONG ISLAND WAS SO APPEALING TO THIS DISTINGUISHED EUROPEAN PHOTOGRAPHER THAT HE SPENT AN ENTIRE SUMMER RECORDING THE EXAMPLES ON THESE PAGES, AND MANY OTHER FINE OLD BUILDINGS, AND RURAL LANDSCAPES. IT IS INTERESTING TO NOTE THAT ST. JOHN'S EPISCOPAL CHURCH, COLD SPRING HARBOR (PICTURED ABOVE), WAS BUILT IN 1836 AND IS THE OLDEST CHURCH IN THAT TOWN. THE MULFORD, THE MILLER, THE THOMPSON, AND THE DOMINY HOUSES WERE THE HOMES OF EARLY SETTLERS, AND THE CAROLINE CHURCH IS ONE OF THE HISTORIC TREASURES OF WHICH LONG ISLAND IS PROUD

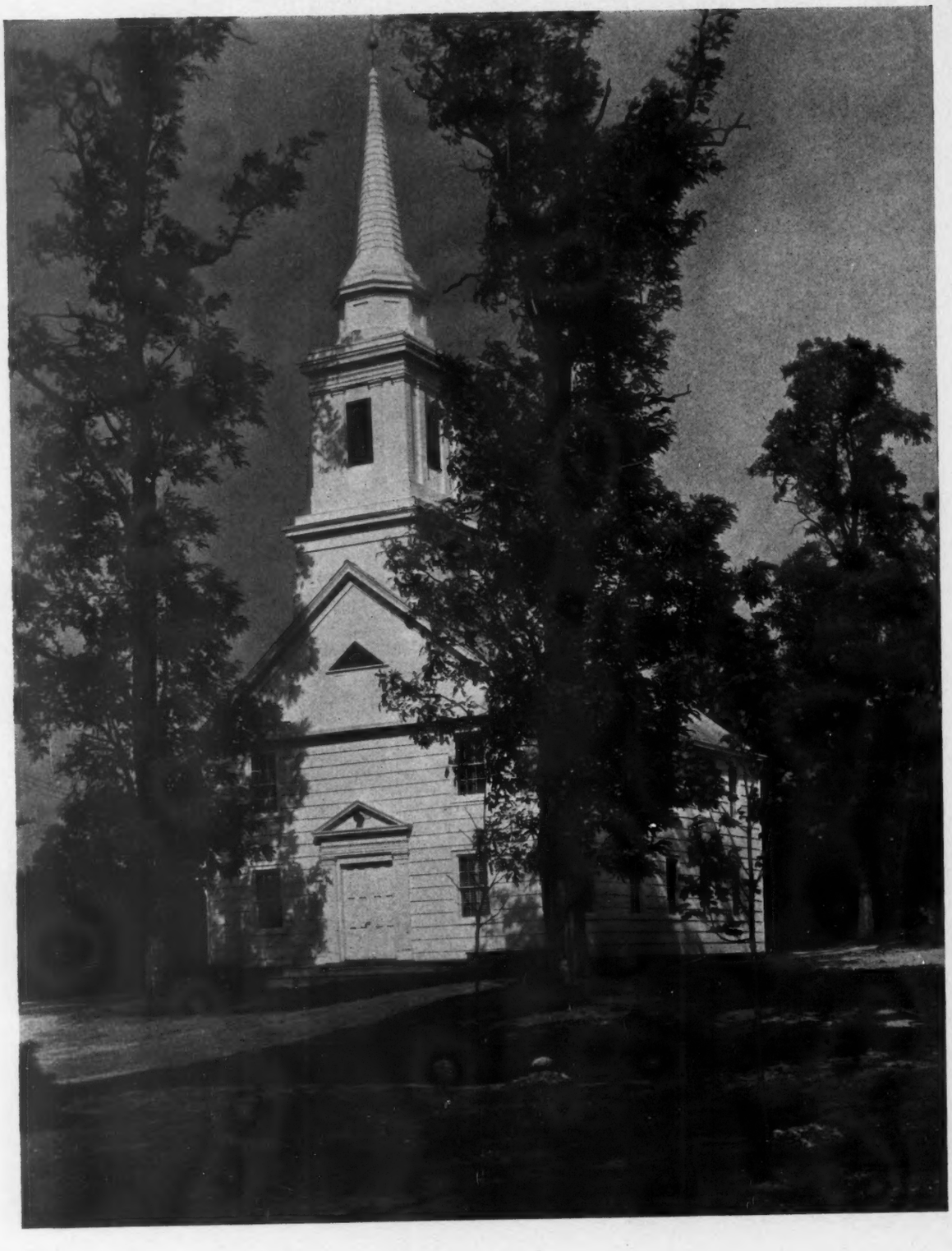


THE MULFORD HOUSE — BUILT ABOUT 1670 — EAST HAMPTON, L. I.

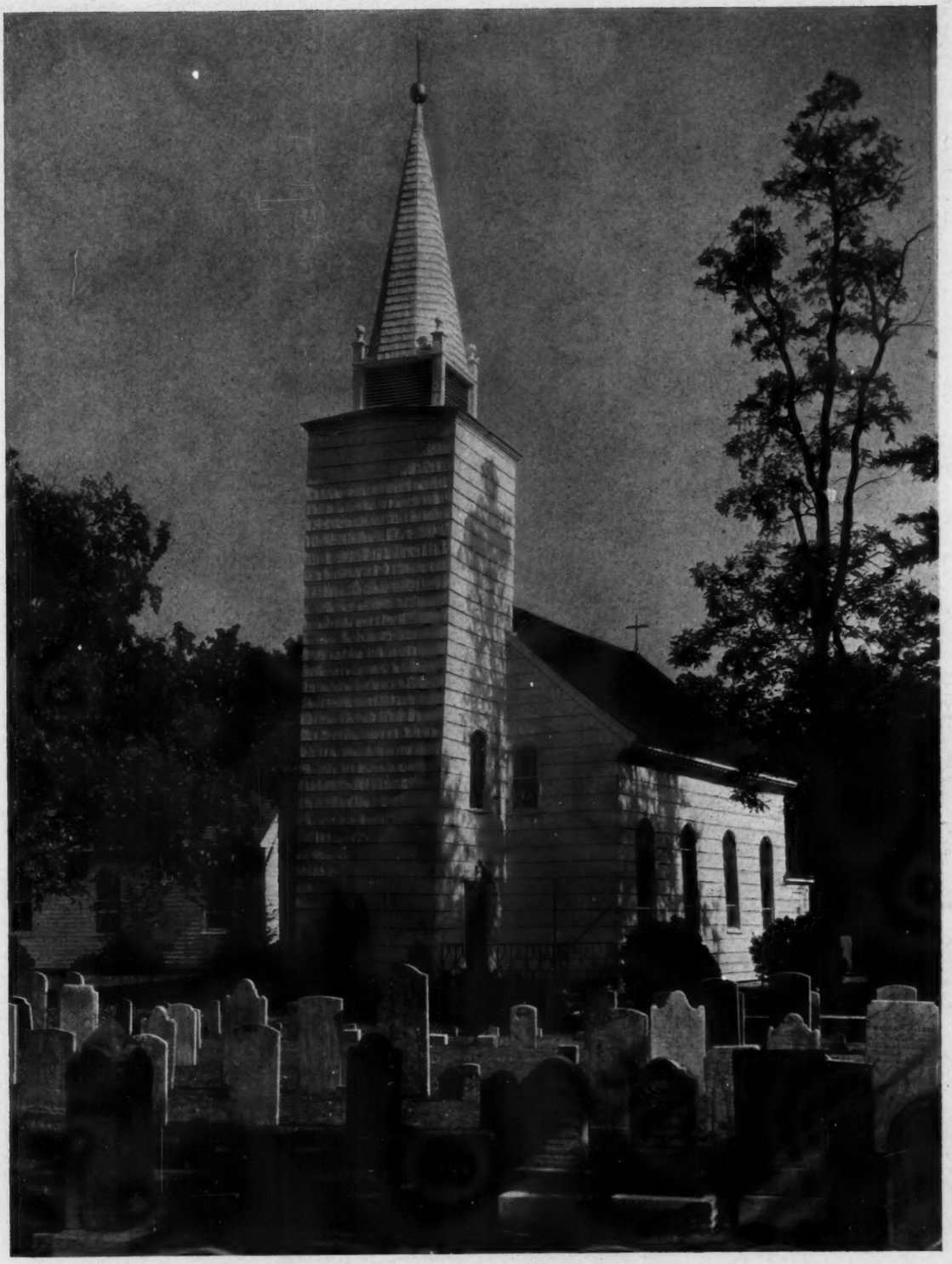
DOUBLE DOORWAY, THE DOMINY HOUSE—c.1710—EAST HAMPTON, L. I.

THE MILLER HOUSE — EARLIEST PORTION 1700—MILLER'S PLACE, L. I.

BIRTHPLACE OF BENJAMIN F. THOMPSON — c.1700 — SETAUKET, L. I.



MT. SINAI CONGREGATIONAL CHURCH—1805—NEAR SETAUKET, L. I.



CAROLINE CHURCH OF BROOKHAVEN—1729—IN SETAUKET, L. I.

COUNTRY VIEW SHOWING OLD HOUSE—OFF JERICHO TURNPIKE, L. I.

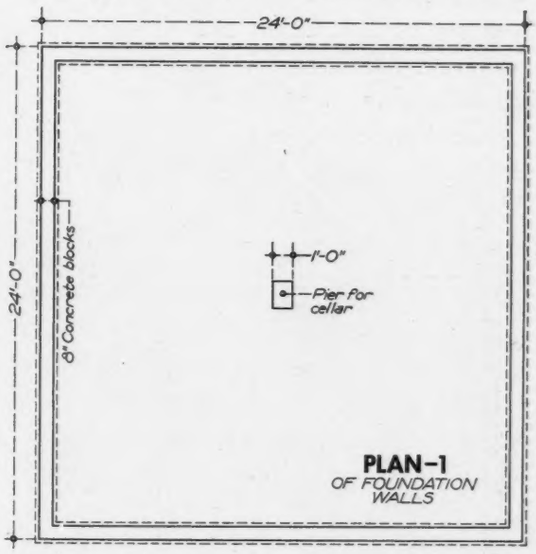
BASEMENTS AND SAVINGS

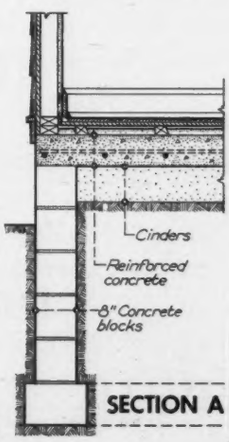
BY LLEWELLYN PRICE

With the widespread adoption of oil fired heating plants, there has been much natural speculation on the necessity of a cellar under the modern home, particularly in the case of the very small house. If we could level the building site and thereon, simply, lay a heavily reinforced concrete slab and upon this slab build the house, allowing for the very slight tilt from frost which might occur, the savings would be appreciable. But architectural engineers of our acquaintance have not yet been willing to commit themselves to such a marked departure under northern conditions. So, in addition to a reinforced slab, we must provide a foundation wall. Immediately our costs start to mount. It might be well to analyze them.

Let us assume that we have a house of outside dimensions 24′-0″ x 24′-0″ without a basement. We must extend our foundation to a fair average of 3′-0″ below the finished grade around the four sides of the house, as shown by *Section A*. Within this square we fill with earth and cinders, thoroughly tamped. On the foundation walls and on the tamped cinders we pour a reinforced concrete slab, waterproofed with a bitumen and felt. On this platform is erected the frame of the house.

Now, for a house of the same outside dimensions but with a full basement below the first floor, we scoop or dig with a power shovel to about 6′-0″ below the finished grade, illustrated by *Section B*. Foundations extend from footings to the bottom of the floor joists and on this square of masonry, with intermediate support near or at the center of the cellar, we frame our first floor joists and cover them with subflooring. On this





wood, rather than concrete, platform we erect our frame house.

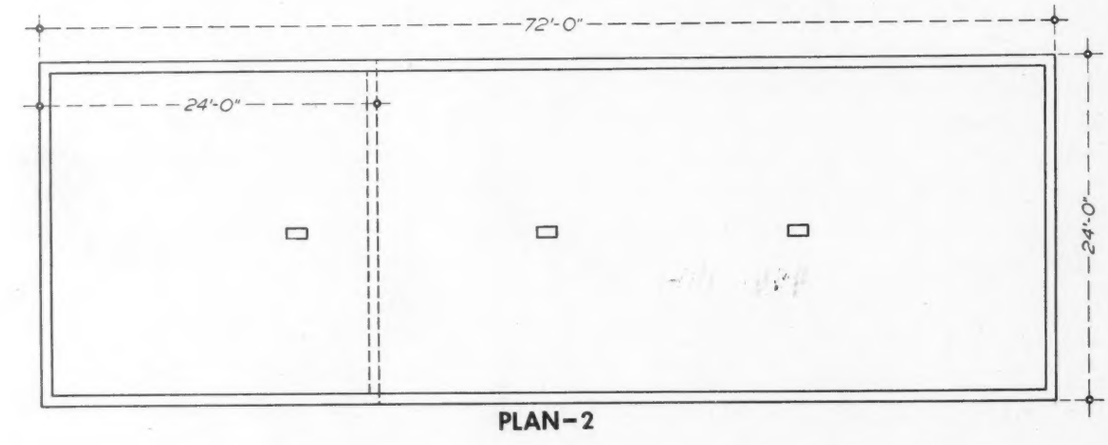
With these two foundations before us, let us investigate unit costs multiplied by quantities as demonstrated in the drawings, to arrive at comparative total expenses. The prices quoted below, while local, will not vary greatly in proportion for different localities. We can dig foundation trenches for the house without a basement at a cost of 25c for three cubic feet or, in this case, for each linear foot of plan perimeter. We can excavate for full cellars, on the other hand, for 40c per cubic yard. An eight-inch concrete block costs 21c laid; a twelve-inch footing block 24c. Here they have been averaged at 22c. Cellar sash at $2.50 is a fair price. All lumber is figured at 5c per board foot.

We need not compute the cost of the concrete slab as, except for reinforcing, it will be the same whether at the top of the foundations or at the cellar floor. The labor required for the floor joists over the cellar area is about the same as for the 2" x 4" sleepers over the slab. Other items in the table below have been closely approximated.

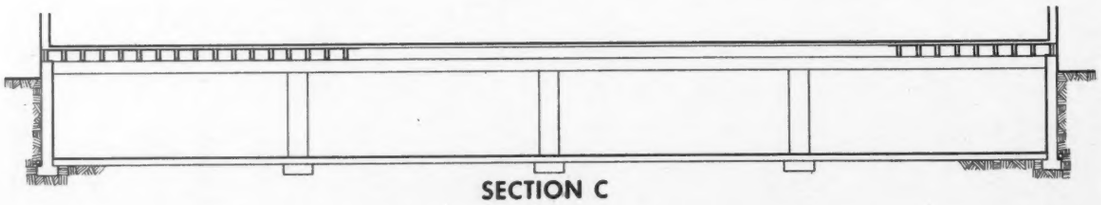
Items	*House with Cellar (Sec. B)*	*House with Slab Foundation (Sec. A)*	*Savings*
Excavations	$ 51.00	$ 24.00	+$ 27.00
Foundation Block ..	172.00*	92.00	+ 80.00
4 Cellar Sash	10.00		+ 10.00
Manhole and Cover .		15.00	— 15.00
Slab Reinforcement .		5.00	— 5.00
Drain Tile	20.00		+ 20.00
Waterproofing	75.00†	40.00‡	+ 35.00
Joists or Sleepers ...	38.00	20.00	+ 18.00
Cellar Stairs	10.00		+ 10.00
Totals	$376.00	$196.00	$180.00

* With Piers
† Walls
‡ Slab

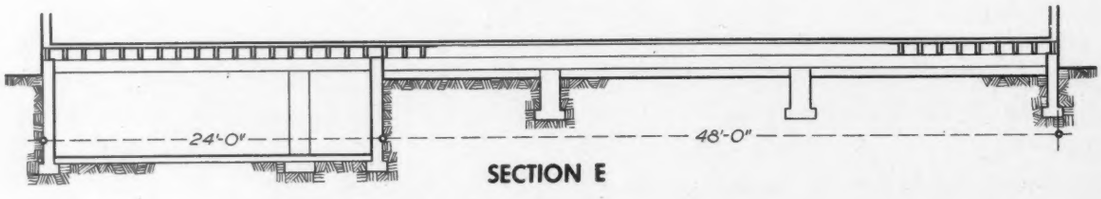
These costs and those shown elsewhere have been altered to the nearest dollar. The item for manhole and cover at $15.00 provides



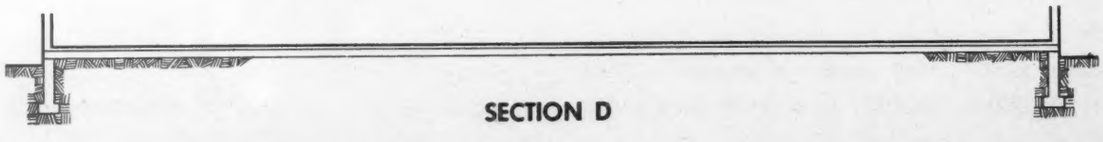
PLAN–2



SECTION C



SECTION E



SECTION D

necessary frost protection for a shutoff cock and meter at the water supply and for the gauge of the fuel oil storage tank. This, of course, is required for a house on a slab foundation only.

We have a net cubic content for the basement of 3,400 feet. At a cost of $180.00 for the basement, each cubic foot in it will cost a trifle over 5c. Compare this with the cost per cubic foot for the entire house, let us say, 30c. Under an FHA approved mortgage plan the home owner would require not more than $18.00 additional.

While we must provide first floor area for the stairs to the basement, this would probably not be as great as that required for the heater and hot water.

Certainly with the maturity of both brain and body, any man will choose walking from one part of the house to another in preference to trudging up and limping down stairs. Despite the obviously greater building costs, one wonders why there are not a vastly greater proportion of one-story houses than there are. Naturally, one of the items added to the costs of the one-story house (as against that of two stories) is excavation carried under the entire structure.

To illustrate this condition, let us assume that we have a plan 24′-0″ x 72′-0″ (Plan 2), equaling three of the units used in our first example. Obviously this shape will not yield a good small home plan but the area or the perimeter will. Comparative costs will be approximately as follows:

Items	*House with Cellar (Sec. C)*	*House with Slab Foundation (Sec. D)*	*Savings*
Excavations	$ 153.00	$ 98.00	+$ 55.00
Foundation Block	544.00	184.00	+ 360.00
Cellar Sash (6)	15.00		— 15.00
Manhole and Cover		15.00	— 15.00
Slab Reinforcement		15.00	+ 15.00
Drain Tile	40.00		+ 40.00
Waterproofing	150.00*	120.00†	+ 30.00
Joists or Sleepers	114.00	60.00	+ 54.00
Cellar Stairs	10.00		+ 10.00
Totals	$1,026.00	$492.00	$534.00

* Walls
† Slab

There seems little reason why $500.00 and over should be put into a hole in the ground as, except for mechanical equipment, there is little other use for this great space. The idea of building out in the country and then spending part of the time there in secondary entertainment rooms below grade, is obviously ridiculous. Apparently then, there is good reason to abandon the basement in other than the minimal house.

But wait—we have not investigated the possibilities of a combination of full and partial excavations. Let us look into costs where there is a full cellar under a floor area of 24′-0″ x 24′-0″ and under the 24′-0″ x 48′-0″ only an air space with foundations extending down exactly the same depth as for the slab construction, as shown by *Section E*. For convenience, let us use the original figure for full basement excavation in the 24-foot square house, making suitable additions to it.

Added for Partial Basement	Fully excavated 24 x 24	$376.00
	Concrete block	105.00
	Joists	76.00
	Excavations	51.00
	Total	$608.00

Waterproofing and drainage for the partially excavated area should not be necessary. Thus this combination of full and partial excavation will cost $116.00 more ($608 less $492) than the reinforced slab foundation. Perhaps this saving is worth while, though apparently the larger the home the less saving there will be.

But—and this time it is our "but"—take the heating equipment from the basement with furnace and ducts or with boiler and piping, and immediately the heating problem is complicated. If in doubt, discuss it with any heating contractor. Further, eliminate the basement, and the plumbing and drainage becomes involved—ask any plumbing contractor. The partial excavation allows for comfortable installation and adjustment of all mechanical equipment—heating, plumbing and electricity. While savings in all cases favor slab construction, it is doubtful if the economy would be nearly so much considering the mechanical complications of this type of construction.

In the very small house, the designer must economize in every detail, for otherwise he would rarely be designing a small house. The economies must be wisely arrived at.

A CLASSIFICATION FOR DRAFTSMEN

AND OTHER WORKERS IN ARCHITECTURAL OFFICES

BY D. KNICKERBACKER BOYD

1. While acting as Consultant to the Labor Relations Division of the U. S. Housing Authority, it became my unique duty to assist Mr. Walter V. Price, the Director of the Division, through the preparation of work-analyses and job descriptions of the professional and technical employees in architects' offices — also in engineers' offices — when either of such offices were engaged upon projects for the U. S. Housing Authority.

2. The determination of suitable Classifications of all such employees, whether engaged by architects, engineers, contractors, sub-contractors or others in office or field work on a government sponsored project, was essential to the U. S. Housing Authority in attempting to establish the "prevailing wage rate" in each locality for each position, as required by the "U. S. Housing Act of 1937 as amended 1938," which provides:

Sec. 16 (2) "Any contract for loans, annual contributions, capital grants, sale, or lease pursuant to this Act shall contain a provision requiring that the wages or fees prevailing in the locality, as determined or adopted (subsequent to a determination under applicable State or local law) by the Authority, shall be paid to all architects, technical engineers, draftsmen, technicians, laborers, and mechanics employed in the development or administration of the low-rent housing or slum-clearance project involved; and the Authority may require certification as to compliance with the provisions of this paragraph prior to making any payment under such contract."

3. The act also provides, by reference, that the time for all workers shall be limited to 40 hours per week with payment of not less than time and a half for all beyond 40 hours.

4. Thus for the first time in connection with Federal Projects it became necessary to ascertain the prevailing rates of pay for professional and technical workers and to set up such payments as minima in localities where any of these workers would be engaged upon Housing Projects financed under the act.

5. While the classifications for "Building Trades workers" seemed to have been fairly well established in all parts of the U. S., an outstanding difficulty became apparent with respect to professional and technical workers. This was due to the lack of titles and gradings existing among the employees in the offices of architects and engineers. While for the most part those employers in these fields, whose opinions were sought and rates of pay discussed, were willing to "open their books," there appeared to exist nowhere in private employment any job descriptions, or a definite peg upon which to hang any particular rate of compensation.

6. In general, the chiefly known factors seemed to be that one employee was recognized as the Chief or Head and one or more might be placed at the bottom. In each case these recognitions were based on the greatest ability or experience and the least, or on the largest and smallest pay received, or on the most authority granted—and the least. In between, when several persons were employed, the positions and pay were "assorted" usually without any attempt at giving titles or ratings according to any known classifications. The basis of understanding seemed to be arrived at as a compromise of the circumstances at the time of employment.

7. In some other cases, notably Governmental offices where large numbers of draftsmen and other professional and technical workers were employed, the classifications by titles, qualifications and duties were so complicated and numerous as to be both confusing and unwieldy—needlessly.

8. Confronted with this situation, we contacted all known sources of possible Classifications in the indicated fields of service, including all professional and technical organizations. The fullest cooperation of each was secured, including that of officials of the Architectural and Engineering Guild Local 66 of New York of the A. F. of L. and the Federation of Architects, Engineers, Chemists, and Technicians, New York, of the C.I.O. The resulting data were compiled, studied, and charted as nearly as possible by related titles, comparative qualifications and duties—ignoring for the time being comparisons of salaries, but few of which were given.

9. The variety in the outcome was astonishing. The fact was disclosed that practically no definite or agreed upon classifications were provided in the lower brackets for those entering the professions or engaged in the early stages of employment in architects' or engineers' offices. In what might be called the middle group, there appeared to be a range of almost a dozen titles or names with an assortment of qualifications and duties that would make it almost impossible for anyone to attach a definite figure of compensation locally for any particular line of performance.

10. With this preliminary data in hand, on behalf of the Labor Relations Division of the USHA I sought the further and more detailed assistance of the principal National organizations, including, of course, particularly the American Institute of Architects, though I had previously ascertained that the subject never had been taken up by or with the Institute. I had found, however, that the American Society of Civil Engineers had been giving serious attention to the subject of Classification and Compensation of Engineers and Surveyors

GRADINGS	YEARS		INTERCHANGEABLE EQUIVALENTS IN EDUCATION AN
PROGRESSIVELY ARRANGED	TOTAL	ELAPSED	ACADEMIC
PRELIMINARY PERIOD	Age 16 (or over)		Preliminary scholastic training including courses in architectural drawing, building construction, and related subjects—plus self-improvement and the desire to continue in the profession through increasing efficiency.
START OF CAREER	Age 17½	½	Ditto. (Plus) Graduation from High School.
GRADE A-1	1	1	Graduate of High School. Continued study in Atelier, Correspondence School, Evening School. Year in College.
GRADE A-2	2	2	Ditto
GRADE A-3	3	3	Ditto
GRADE A-4	4	4	Ditto
GRADE A-5	5	5	Ditto
		1	Continued self-improvement in office or field or both —or elsewhere when unemployed.
	6	2	Ditto
GRADE A-6	7	1	Ditto
	8	2	Ditto
GRADE A-7	9	1	Ditto Eligible for State Board Examination for Architects.
	10	2	Ditto Registered Architect.
GRADE A-8	11	1	Ditto
	12	2	Ditto
GRADE A-9	13	1	Ditto
GRADE A-10	14		Ditto

IN OFFICE AND
ARCHITE
Acting as "office boy" and capably performing any appropr fulness. Additional self-improvement through study of archit
Making corrections to maps, surveys, and filing of tracings and supplies. Ordering and trimming prints, sending or tak ings by others. Making experimental drawings and tracin capably performing any appropriate duties assigned.
Looking up catalogue references, filing catalogues, cleani photographs, etc. Tracing drawings made by others, of min plans of buildings, lettering and titling. Capably being of work. Aiding in taking measurements for architectural surv
Developing preliminary layouts of working drawings of pl and preparing simple details from sketches and data by o same. Doing incidental drafting of simple type.
Making corrections and alterations to working drawings, office and being of general assistance to others in translati Making visits to buildings under construction preliminary tendents. Independently taking measurements for architectu
The same as those of the positions previously mentioned u nature due to acquired experience in those fields sufficien preparation of preliminary studies for plans, elevations an others of major importance. Preparing actual working drav sketches or layouts and accurately tracing same, making s details and making usual full size details. Also ability to sions, working drawings, scale details, contractors' shop dra
These positions involve a thorough general knowledge of the practice of architecture, and require the full spirit of amount of directional ability. Specifically the preparation various mediums. Planning, designing and detailing of buil Cooperation with office technicians, engineering and other p ing and full size detailing of ornamental, sculptural and ot ing as required, with superiors or alone, the sites of propo raphy, local conditions, natural and architectural surroundin requirements, proposed materials, etc., and inspecting cartoo
These positions involve technical ability in addition to all in the positions previously outlined. (a) The Technician or Technical Draftsman, etc., is a Ser the requisite additional knowledge to enable him to be engineering, mechanical engineering or electrical engineerin buildings he can regulate their elements to properly accomm as to spacing, size, arrangement, installation, application a He must be sufficiently capable in this capacity to act as coo requirements and act as point of contact with any employe architect to represent him as an inspector or supervisor of i (b) The Specification Writer is the equivalent of a techni edge and experience but possesses the ability to put into appr complete, sound, workable and economic housing structures (c) The Examiner and Checker (Final) is the equivalen and ability to discover whether or not all of the componen and provided for—and to see that all drawings are complet (d) The Quantity Surveyor and Cost Estimator is the eq thoroughly abreast of all Costs applicable locally for mate computations including comparisons as to maintenance. (e) The Superintendent or Inspector is a technician who tion work as it progresses and to capably see that the dra are complied with.
This position carries with it the various qualifications and g man plus a general familiarity with the work of those in administrative capacity. The position will usually be found the Chief Draftsman or the Architect or the Chief Architect Heading up and supervising a small force in office or fie work in office and assisting in directing the technical st specifications, etc., and in supervision of outside work.
Carrying forward housing projects or architectural work of designing and estimating with the assistance of staff membe ings. Taking charge of the drafting and technical personne bers doing outside work. Directing the preparation of room work and having general oversight of the preparati occasional field visits and rendering final decisions with res the site.
Independently or under lay direction, with complete respo and for the technical soundness of the methods or work

AND EXPERIENCE	SCHEDULE TO ACCOMPANY ARTICLE IN PENCIL POINTS	
ND OUTSIDE	RESPONSIBILITY	TITLES VARIOUSLY USED
ECTURE	PROFESSIONAL AND TECHNICAL CLASSIFICATIONS	
propriate duties assigned in becoming of general use-architectural subjects, as indicated in academic column.		OFFICE BOY MESSENGER STUDENT
cings, blue prints, specifications, etc. Care of samples r taking out packages. Examining and studying draw-tracings, doing minor lettering, bordering, etc., and	Under immediate direction and following specific instructions as to methods of procedure, policy and standards.	STUDENT STUDENT DRAFTSMAN BEGINNER HELPER
leaning and trimming tracings, mounting drawings, minor buildings. Doing simple layouts of properties, g of general usefulness in office routine and outside l surveys of existing buildings.		APPRENTICE APPRENTICE DRAFTSMAN DRAFTSMAN—TRACING AND COPYING TRACER ARCHITECTURAL ASSISTANT
of plans, elevations, and sections of minor buildings by others. Neatly tracing or finishing and lettering		JUNIOR DRAFTSMAN—GRADE A-3 SUB-JUNIOR DRAFTSMAN SUB-JUNIOR DETAILER SIMPLE DETAILER IMPROVER
ings, as directed. Familiarity with routine work in nslating ideas obtained into architectural descriptions. inary to submitting reports to inspectors or superin-itectural surveys of existing buildings.		JUNIOR DRAFTSMAN—GRADE A-4 JUNIOR DETAILER JUNIOR ARCHITECTURAL DRAFTSMAN SCALE DETAILER
ed under Junior Draftsman, but of a more advanced fficient to warrant the making of sketches and the s and sections of buildings of multiple occupancy or drawings of houses or housing units from superior's ing sketches for and preparing and inking in scale to check in a preliminary way, as assigned, dimen-p drawings, etc.	Under direct supervision of the Job Captain or a designated Senior Draftsman and with limited latitude for unreviewed action or decision affecting procedure.	JUNIOR DRAFTSMAN—GRADE A-5 SUB-SENIOR DRAFTSMAN ASSISTANT SENIOR DRAFTSMAN ARCHITECTURAL DRAFTSMAN DRAFTSMAN—SUPERVISING OR QUALIFIED CHECKER (PRELIMINARY) JUNIOR ARCHITECT — APPLICANT-NOVITIATE
		Ditto
e of routine work in office and field, connected with rit of cooperation with all associates and a certain tion of sketches and the rendering of drawings in buildings and familiarity with appropriate materials. her professions, and knowledge of the crafts. Design-nd other features of buildings. Outside of office visit-proposed housing or other projects, observing topog-undings, passing preliminary judgment on appropriate artoons, models, etc.	Under higher administrative and technical direction but with considerable latitude for independent judgment under approved policies and standards.	SENIOR DRAFTSMAN SENIOR ARCHITECTURAL DRAFTSMAN DRAFTSMAN—GRADUATE OR CERTIFIED DESIGNING DRAFTSMAN ARCHITECTURAL DESIGNER DESIGNER SENIOR DETAILER
		Ditto
all or parts of the training and experience acquired a Senior Draftsman who has specialized in acquiring be familiar with accessorial features of structural neering to the extent that in planning and designing ccommodate themselves to the necessary requirements on and satisfactory disposal of all component parts. s coordinator of these and the respective architectural ployed or consulting engineers and on behalf of the of installations and equipment at the site. echnician who has not only the same general knowl-appropriate language the provisions which will insure ures and surroundings. ivalent of a technician who has the keen foresight ponent features of every building are properly shown mplete before issuance for final estimates. he equivalent of a technician who has kept himself materials, methods and labor and can make proper who has the ability and agility to cover all construc-drawings, specifications and all proper requirements	In full cooperation with one another and with designated Senior Draftsman, under immediate direction of the Squad Boss, Job Captain or Head Draftsman with considerable latitude for independent judgment and action under approved policies and standards.	TECHNICIAN TECHNICAL DRAFTSMAN ARCHITECTURAL ENGINEER COORDINATOR SPECIFICATION WRITER EXAMINER AND CHECKER (FINAL) QUANTITY SURVEYOR AND COST ESTIMATOR SUPERINTENDENT INSPECTOR
and general knowledge required of the senior drafts-se in the technical occupations, plus a demonstrated und only in large offices, as with a small organization chitect of a group will function in this capacity. or field, carrying on the design, drafting and detail cal staff in the matter of preparing cost estimates,	To maintain cooperation, order and discipline with partial responsibility to the Chief Draftsman or Architect superior for independent judgment and action.	SQUAD CAPTAIN SQUAD BOSS JOB CAPTAIN
rk of any type, including the investigating, planning, members, of first cost and maintenance cost of build-rsonnel and maintaining contacts with all staff mem-of preliminary sketches, supervising the drafting paration of drawings, details, specifications. Making th respect to the supervision of actual construction at	Directly to the architect or designated head of a group of Architects, who independently, subject only to final approval of the proper Local Housing Authority officials, shall have complete responsibility.	CHIEF DRAFTSMAN HEAD DRAFTSMAN CHIEF OF STAFF ASSISTANT ARCHITECT
responsibility for the standards and methods applied work and the accuracy and reliability of the results.		ARCHITECT CHIEF ARCHITECT

for several years through a Committee which has issued a number of reports and recommendations. These Engineering Classifications did not, however, cover the lower bracket employees, or sub-professional grades, in Engineers' offices, so I had taken up those classes with the Civil Engineers' Committee and received fine cooperation from its Chairman, resulting in the preparation of a Classification for Employees in Engineers' and Surveyors' Offices, which is not here included.

11. I was afforded the opportunity to appear before the Board of Directors of the Institute at a meeting when Mr. Walter R. MacCornack, then Chairman of the Institute's Committee on Housing, was in attendance. I presented all the facts and data then at hand, including hastily prepared classifications by the labor organizations based chiefly on years of education and/or experience. After considerable discussion, authority was placed in Mr. MacCornack's hands to cooperate with me in presenting tentative classifications for the workers in architects' offices engaged on housing projects to Mr. Price and Mr. Nathan Straus, and to give his decision on behalf of the Institute.

12. This resulted in further conferences and the submission of a preliminary outline of positions in their progressive order with a job description of each. These were more fully developed and after further approvals by Mr. MacCornack and Mr. Price were issued by the U. S. Housing Authority in mimeographed form as a "Description of Professional and Technical Positions in Architectural Offices—Arranged by Various Titles Commonly Used, in Accordance with Duties and Responsibilities Assumed."

13. It is to be understood that this Description is a tentative one prepared only for the use of the USHA and its collaborators in submitting to Local Authorities and cooperating groups and individuals for their assistance in establishing, in localities where housing projects may be undertaken, what may most nearly be regarded as "prevailing wages" for the respective workers in professional offices.

14. Nevertheless, in all essentials it could be made applicable for general use and prove a most desirable document for many purposes. During the development of the Descriptions, the author attempted to synchronize them with hypothetical years of progress and accomplishment and prepared preliminary graphs scheduling the descriptions according to time presumed to be required and giving each position a Grade designation that might take precedence over an assortment of titles.

15. As such a system of Grades is open to still further and more discussion than the Descriptions themselves, Mr. Price quite naturally did not include such a Schedule in his published document. Because of its possible usefulness not only to Architects, Draftsmen, Collegiate Schools of Architecture, the American Institute of Architects and its Committee on Education, and others, I am offering it here for the purpose of inviting criticism and comment. Perhaps, too, the Committee of the New York Chapter which is doing such fine work in standardizing the relationships between Architects and Draftsmen may wish to assist in standardizing Gradings and Descriptions for positions.

16. Within the framework of this Schedule the texts of the Descriptions and of the Responsibilities are identical with the wording of the USHA Document No. 59301-H, and the Titles also include all of those listed in that Document with but few additions. Two of these preliminary schedules were drafted and lettered in my office; one for employees in architects' offices and the other for employees in structural engineers' and surveyors' offices or for those engineering employees in architects' offices. The latter schedule is believed to be general enough to cover mechanical engineers and electrical engineers, for all preliminary purposes.

17. Each schedule, as in the architectural one here illustrated, begins with the entrance of a young person into any of these professions. In the first column is presented Grade designations from 1 to 10. In the Architectural Schedule these numerical gradings are preceded by a capital A to differentiate them from the numerical gradings in the Engineering Schedule which are preceded by a capital E. Grades 1 to 4 inclusive are assigned one year each. Grades 5 to 8 inclusive, two years each. At Grade 9 the individual is within one year of being a full-fledged architect, Grade 10 (14 years). The next two narrow columns give by years of time what would seem to characterize the logical progress of an individual in acquiring these Grades. The first main column, marked "Academic," repre-

sents advancement through educational institutions, or legally required steps. The second main column lists the experience assumed to be acquired through appropriate duties if well performed during the corresponding years in office or outside work and which may be generally considered to constitute the equivalent of the corresponding years of education. These two main columns are interrelated and intended to be interchangeable equivalents to the extent that at any period of progress, the individual following the educational course might leave the same and perform approximately the duties briefly outlined in the second main column —or the individual indicated in the column of office and field duties might take up educational courses on a whole time basis, or on a part time basis, if combined with work in office or field. The next narrow column, marked "Responsibility," is self-explanatory, as the various Grades are passed through, and the last column lists titles variously given by the American Institute of Architects, the U. S. Civil Service Commission, the Works Progress Administration, the A. F. of L., the F.A.E.C.T., and others. These have been selected as nearly as possible on a comparable basis, as equivalent titles.

18. In either case it was assumed in preparing these preliminary schedules that the individual shall have been previously educated in a grade and high school at least to the extent of completing the tenth grade, or attendance legally required, if not following through to graduation from a high school. Also that during such preliminary scholastic education the individual shall have had courses in architecture, engineering, mechanical or building construction drawing, and related technical matters. Moreover, it was believed desirable, but not a prerequisite, that any individual entering into any of these technical professions should express the desire to follow through along the lines of the profession selected. Upon a continuance of their interest and upon their capable performance at each stage of progress would rest their advancement in standing.

19. It was also assumed that individuals pursuing the educational courses would take advantage of every opportunity to perfect themselves along the practical lines indicated in the second main column and that those who are acquiring their practical experience as indicated in this column would, at the same time, take advantage of every opportunity for self-improvement along educational lines through attendance at night school, lectures, etc., or taking correspondence school courses, or attending ateliers, or participating in equivalent educational procedures. Combined knowledge and skill in the subject matters and techniques involved by each year of progress are to be considered requisites for the classification within the grade indicated.

20. In the preparation of these tentative schedules one of the aims was to avoid giving definite titles for identification and it was intended that compensation should be listed according to the grades rather than by titles. For the purpose, however, of assisting those furnishing the USHA with their interpretation of the wages or salaries which should be applied to each of the grades locally, the last column was provided in which is listed some of the names commonly understood to apply to the classifications as just previously explained.

21. The earlier grades were provided, not with the thought of making it possible for employers to secure "low-cost" help, but with the intention of providing openings for the entrance into the professions of the supply of young blood needed to renew and vitalize any calling. There should always be a place for a certain number in these Grades of the Classifications, to whom the employer should give assistance and encouragement through providing opportunities for them to gradually acquire the necessary educational or practical experience. This would provide also for summer students or part-time workers from architectural schools.

22. In addition to these younger men, or "beginners," all encouragement should be given the workers in all other Grades to advance. If especial ability in any particular line seems to be evident, nothing in the Schedules should be construed to prevent a trial advance from one grade to another — subject, however, to adjustment on time-sheet and payroll if the worker remains in the advanced grade for a longer period than, say, one month.

23. As in all callings there will be those who are now employed or eligible for employment who have previously entered the professions through the doorway of experience and hard knocks without the opportunity for guidance or organized training. To provide for these individuals who, because of their initiative and perseverance, deserve just consideration, the practical equivalents of the appropriate Grades would be determined between the individual and the employer—subject to review by the Local Housing Authority of the individual's previous record on written application forms, and subject to later demonstration of the character of work, successfully performed, as disclosed by time sheets. The latter, on typical forms, should be carefully prepared in any office engaged upon a housing project and be available to any proper representative of the Housing Authority.

24. In the Schedules the years of continued progress are hypothetical only, except as might be legally required for employment, registration, etc., or required by educational institutions for attendance. The word "Grade" was used advisedly and after consideration of all other terms. It corresponds with the nomenclature finally adopted (January, 1939) by the American Society of Civil Engineers at its Annual Convention in New York City.

25. The earlier grades naturally cover 4 to 5 years each, as this period of time is the required course in Architecture and Engineering at most accredited Colleges and Technical Institutions. The years which would follow in the subsequent grades, constitute the period required after graduation before which an Architectural or Engineering aspirant may become Registered, according to the Laws for the Registration of Architects and Professional Engineers and Land Surveyors, though three years suffice in most states for Architectural Registration. In either case, however, P. G. courses may run simultaneously.

26. Regarding all the grades outlined, it would be understood that while they are intended to represent normal expectancy in the development toward ultimate all around proficiency, there will always be some individuals who will be stepping up more rapidly than most of the others. These should, of course, be given special consideration. There will also be found individuals who will consistently remain proficient in their grade without inclination to advancement. By their works they shall be known, and each should be treated accordingly.

MONTHLY WASHINGTON REPORT

COMPILED BY A. D. TAYLOR OF CLEVELAND

EDITOR'S NOTE: This report is prepared each month, based upon observations and information in connection with the different Government agencies, concerning the National Defense activities, considered to be of interest to members of the technical planning professions and to the building industry. Comments and suggestions from readers will be welcomed by the editors, as to the kind and extent of information which may be of maximum interest to the readers of PENCIL POINTS.

AS TO GENERAL PROGRESS

Since the publication of the last report, a very limited number of major defense projects (ordnance projects and general hospitals) have been announced. Construction work on the projects included within the original appropriation is rapidly nearing completion.

Large sums of money have been appropriated with which to continue the preparations for maximum defense and productive capacity. Information now available to the public indicates that with the expansion of the army enlisted personnel there will be a corresponding increase in the housing and production facilities, so essential in the defense program.

No specific new program has been announced. It is expected daily that such announcement may be forthcoming, at which time the representatives of the technical planning professions will be fully informed as to the demand for their services in the anticipated program of planning.

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MONEY FOR PLANNING

The magnitude of this program of planning, requiring services from the technical planning professions, is evidenced by the appropriations recommended by the "Appropriations Committee of the House of Representatives," and included in the Bill H. R. 3617, under the "Fourth supplemental national defense appropriation bill for 1941" and reported in the "Hearings before the sub-committee of the Committee on Appropriations, United States Senate." This appropriation of $15,000,000 is in reality to be expended for advance planning as set forth in the tabulation contained in the "Hearings before the subcommittee of the Committee on Appropriations in the House of Representatives," and reading as follows:

Site selection and planning (including investigation of sites and site planning in each site)	$ 1,500,000
Aerial photography	50,000
Field surveys and preparation of field maps (including the field survey necessary for engineering investigations and acquisitions of real estate, basis for engineering studies, etc., of 40 camps involving a total area of approximately 1,500,000 acres)	4,000,000
Travel	450,000
Supplies (including office equipment, blueprints, photostats, survey instruments, stationery, etc.)	500,000
Field offices (including construction of small field offices, rentals, etc.)	100,000
Water-supply investigations (engineering investigations for water supply including borings)	1,000,000
Sewers and sewage-disposal investigations	400,000
Electric light and power investigations	300,000
Transportation-facilities investigations (including investigations and engineering studies on roads, railroads, etc.)	500,000
Foundation investigations	200,000
Preparation of working plans and specifications (engineers' and architects' fees, hire of personnel)	6,000,000
Total	$15,000,000

The extent of the planning program is indicated by this detailed report.

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DEFENSE HOMES CORP.

To this agency within the RFC the President has allotted $10,000,000 of his general defense funds, to be used as equity money in constructing "Defense homes" which can be developed profitably by private builders who for one reason or another are not able to proceed with sufficient speed in financing such projects, to meet the requirements of the present emergency. Twenty percent of the housing cost is provided by the Defense Homes Corporation and eighty percent may be borrowed from the RFC on a mortgage guaranteed in the usual way by FHA. The Defense Homes Corporation will select and purchase the site (ranging from 50 to 250 units in each project), employ the site planners, architects and engineers, and contractor. These projects will be developed only after the need for that kind of defense housing has been certified by the defense housing coordinator. Information concerning this Government activity is referred to in the release dated April 3 (D.H. 34) from the Office of Emergency Management and covering an address made by Mr. Charles Palmer on the evening of April 3.

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PBA AND USHA HOUSING

In all probability a considerable number of defense housing projects to be developed by USHA and by the Public Buildings Administration (to the extent that such projects are allocated to each of these Federal Housing agencies) will be announced before this report appears in print. Most of the critical problems of housing for rapidly expanding industry such as that occurring in Newport News and at San Diego have been solved. There will, however, be a continued expanding program in those centers of industrial activity where housing shortages are becoming evident.

Both of these agencies (the USHA employing offices in private practice

and the PBA preparing plans through its salaried personnel) are making rapid progress. Practically all of the defense projects allotted to date to the USHA are now nearing the stage of final plans and specifications, or are under construction. The Public Buildings Administration reports that its extensive program of planning for all defense housing allotted to it under the Lanham Act and under previous legislation is now ninety percent complete and the schedule calls for the completion of plans and specifications for all of its defense housing by the end of April.

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LEGISLATION PROGRESS

The new Lanham Bill approved by the Committees in the House of Representatives and in the Senate will be passed, without doubt, before this report is printed. The Senate has amended this Bill to provide for additional cost of housing units, approximating $3,000 in the original Bill and now totaling approximately $3,500 in the amended Bill.

"Title 6" making additional monies available for defense housing, through the FHA, has passed the House of Representatives and the Senate.

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SELECTION OF SITES

A "panel of consultants" is under consideration to be appointed by the Public Buildings Administration for consulting work to the extent necessary in the selection of sites and the development of preliminary studies for housing projects to be planned by the Public Buildings Administration. These consultants have been selected largely from the professions of landscape architecture, and of "planning." They will be available upon call, to visit prospective sites and to advise upon the selection of sites; and to inspect and study sites which have been selected, and to return to Washington for the purpose of rendering assistance in the development of the fundamental studies for such housing projects. These men will be paid upon a *per diem* consulting basis for their services.

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THE WAR DEPARTMENT

The functions of the technical planning group employed in the Construction Division of the Quartermaster General's Office are set forth in an "office bulletin, No. 69 — 1941," dated March 4, a limited number of copies of which may be available through the "Public Relations Section" of the Construction Division in the Railroad Retirement Building in Washington.

In general these functions are as follows:

1. Prepare and issue typed plans and specifications.
2. Prepare and issue special plans and specifications when necessary.
3. Prepare instructions for the architect-engineers.
4. Prepare instructions for the zone construction quartermasters and the construction quartermasters on technical planning matters.
5. Exercise technical supervision over the work of the architect-engineers, as to kind and extent of plans produced and as to the quality of the plans.
6. Check and approve or disapprove architect-engineers' plans when submitted to the Washington office.
7. Receive and answer questions from engineering consultants and from other consultants on planning problems.

These are some of the more important functions of the technical planning groups referred to in the February issue of PENCIL POINTS Magazine.

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N. R. PLANNING BOARD

The National Resources Planning Board is proceeding under instructions from the President to develop a report on "development of resources, and stabilization of employment in the United States" over a six-year program. This is referred to as a "shelf" of Public Works which has been prepared by the Board in accordance with the "Federal employment stabilization act." This "shelf" or reservoir will provide a list of long-range projects from which Congress and the Administration can select activities in the amounts and kinds appropriate to the times whenever needed. It is quite likely that a "revolving fund," to be administered by the President, will be set up for the immediate inauguration of surveys, investigations, and preliminary engineering plans with revised plans and specifications for specific projects. This report from the National Resources Planning Board is available from the Office of the Superintendent of Documents at $1.25 a copy.

MAJOR DEFENSE PROJECTS

In all probability the greater percentage of work to be done by the technical planning professions will be in connection with those projects administered by the War Department and by the Navy Department. In the War Department, as has been heretofore indicated, the United States has been divided into nine Corps areas with a zone construction quartermaster in charge of each zone. There will be an increase in tendency to decentralize the Washington authority, possibly to the extent that the zone construction quartermaster will have considerable latitude in selecting and negotiating contracts with members of the technical planning professions.

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PLANNING BULLETINS

In any new program of work requiring the services of members of the technical planning professions, it is quite probable that a number of bulletins will be published for the information of the site planners, the architects, and the engineers engaged in planning and supervising the construction on these projects.

Information may be readily procured from the offices of the zone construction quartermasters as to the extent of responsibility for preparation of plans, supervision of construction work, and negotiation of minor contracts. In each of these zone offices there is a chief zone engineer and a chief zone architect. Because of the extent and the nature of the problems of landscape architecture involved in the site planning and specific detailed developments on the property, it is hoped that there may be appointed to each zone a zone landscape architect or site planner, to function in a collaborative procedure with the architect and the engineer in much the same way as the representatives of these professions now collaborate in solving their respective problems in the Washington office of the Construction Division.

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JOINT ACTIVITIES

The inequities and the inconsistencies in the established rates of remuneration in the form of *per diem* consulting fees adopted by different agencies creates a problem which in all probability will require the combined activities of the members of the profes-

sions heretofore working in a collaborative way upon other problems concerning the relationship between the Federal Government agencies and these professions.

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RECREATION FOR CAMPS

It is quite likely that an extensive program of providing major and necessary recreation areas (regulation baseball fields, football fields, softball areas, volleyball areas, and other minor areas) will be instituted within a very short time, and these areas will be planned and developed on those cantonments where the need now exists.

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COMMUNITY FACILITIES

Of very definite interest to those engaged in the technical planning professions is the appropriation approximating $150,000,000, under the "Community Facilities Bill," to provide monies for the use of those communities where expenditures are made necessary for the improvement of roads, development of schools, and the installation of utilities, for which the communities are not in a financial position to pay. This Bill has been passed, giving recognition to the fact that such additional and abnormal facilities can be made available with Federal Government monies. These funds should provide much opportunity for the employment of men in private practice, in the technical planning professions.

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WPA FOR CANTONMENTS

After the architect-engineer has completed, through the contractor, the construction program, the further improvement of the sites (finished grading, most of the recreation areas, surface drainage, and planting) will be done with the aid of the Works Progress Administration. The plans for this work will undoubtedly be prepared by men in private practice.

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SELECTION OF PROJECTS

The War Department will probably publish in the near future a set of mimeographed "criteria" which are useful as a guide to those charged with the responsibility of selecting any sites for cantonment or ordnance projects. This set of criteria may be available through the Public Relations Section of the Construction Division.

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FEES FOR HOUSING

No schedule of fees acceptable to the technical planning professions has been established to date by the United States Housing Authority. In fact, the USHA has officially indicated its desire to discuss with the representatives of these professions only the problems of fees and of contract forms on low-rent housing projects. On the other hand, the USHA is proceeding to employ professional services from these technical planning professions on defense housing projects although officially this agency has refused to discuss with the representatives of these professions, in an official way, any questions concerning a proper schedule of fees for each of them on such projects. This is a somewhat unusual procedure and creates a rather embarrassing situation between this Government agency and the representatives officially appointed by their respective professions to discuss these matters concerning fees and forms of contract. April 2, 1941

CONNECTICUT ARCHITECTS' DEFENSE ACTIVITY

A release sent out by the A.I.A. late in March reads as follows:

The isolation of all new Connecticut defense plants and the immediate surveying of the principal industrial areas in the State to determine the best methods of civilian protection are urged by *George H. Gray* of New Haven, chairman of the committee on civil defense of the Connecticut Chapter of the American Institute of Architects.

Although studies of protective measures are being made by the Army staff in Washington and will be available in due time to official state and municipal defense bodies, certain phases of civilian defense call for immediate action.

"Under the heading of deserving prompt attention would come such items as the maximum possible spread of risk in the expansion of defense industries and among defense workers," he points out. "This applies to the separation of buildings in individual plants and to the separation of plants. It applies to open planning in housing developments as well as to locating new housing reasonably remote from the plants."

Surveys of existing conditions preparatory to an emergency are essential, and it should be realized that surveys take time and must be done in advance of the emergency, Mr. Gray points out. "Surveys will be needed for the protection of cities against conflagrations, for the protection of the population during raids, and for various types of aid to civilians after raids.

"The inflammable construction of large areas of our cities makes it necessary to plan for demolition strips separating various parts of the city, and, for those dehoused, other shelter must be foreseen. The architects would seem to be the group best prepared to carry out the following program of action:

"First, to make a survey and report on both the demolition areas and on the new habitations.

"Second, to select in conjunction with engineers existing structures or parts of them for air-raid shelters and for the first-aid and other emergency depots.

"Third, to plan for the protection of those assembled in public places, especially pupils and teachers in schools — protection through disciplinary measures and through selection of existing space for air-raid shelter or planning special construction.

"Fourth, to draw up plans for separating the population from the proximity of military objectives."

Several of these surveys are already being made by members of the architects' civil defense committee, Mr. Gray reports. A study of how best to separate the population from military objectives has been made in the New Haven area by graduate students at the Yale School of Architecture under the direction of Professor *Andrew Euston* of the defense committee. The protection of public assemblies is being investigated by *John Nichols* of

Hartford, architect to the State Board of Education, and *Ernest Sibley*, nationally known school architect residing in Litchfield.

"The construction of air-raid shelters is one of the technical problems which should wait for the reports of the army staff," according to Mr. Gray. "The expansion of hospitalization must originate with the hospital authorities, and camouflage, which is in its nature secretive, should from start to finish be under strict military control.

"Military methods are not static and it often happens that by the time a report is written or a plan is made new conditions require reconsideration. It would seem to follow from this that the best procedure for the architects at present is to survey the structure and use of existing buildings, of essential utilities, and of arteries of traffic, and defer until a later period the more intensive study of means of their defense. Our cities are different in structure and plan than most European cities and we will have our own solutions to find.

"An essential characteristic of the Army, as of the Department of State, is that in so far as is humanly possible specific plans must be kept secret. A part of the process of maintaining secrecy and at the same time of keeping all informed who should be informed is the system of routing suggestions and decisions through 'military channels,' which inevitably causes delays.

"These two conditions are the source of much of the criticism of the Army which is always current as soon as any emergency arises. Both the Army and the State Department have their official observers in all foreign countries, particularly those at war, and it cannot be doubted that the Army is collecting data bearing on the problems of our committee.

"In due course information will be forthcoming from the War Department to the officials of the defense committees of the several States. If there is to be any responsibility for action, this is as it should be. Delays on this score should not discourage us. We have the surveys to make—of existing conditions. We have to familiarize ourselves with certain basic ideas before we can advance into newer methods."

Mr. Gray served for two years as a staff officer during the First World War, acting as an advisor on military and civilian defense both in this country and as a member of the American Expeditionary Forces. The defense committee which he heads was organized in October, 1940, and functions in close cooperation with the Connecticut Joint Executive Defense Committee.

Other members of the Committee are: *William F. Brooks*, New Britain; *Raymond Ellis*, West Hartford; *Harold Davis*, New Haven; *Leonard Ashein*, Bridgeport; *Charles Wellington Walker*, Stratford; *Frank H. Bissell*, Norwalk; *William J. Provoost*, Stamford; *W. W. Sunderland*, Danbury; *Charles Palmer*, Torrington; *Miles H. Mann*, Norwich; *Lorenzo Hamilton*, Meriden.

The architects' committee is divided into sub-committees for each of the nine industrial areas in the State, which include twenty-one cities and towns engaged in the manufacture of munitions and airplane parts.

The work of a special committee on research and public information, of which *Lawrence Moore* of Wilton is chairman, is subdivided as follows: *Phillip Sunderland* of Danbury, and *Douglas Orr* of New Haven, location of housing and industry; *Herbert Gibson* of Hartford, conflagration hazards and urban rehabilitation; *Mr. Moore*, location and structure of bomb shelters; *Stanley McCandless* of New Haven, camouflage of utilities, supplies, transportation, communication, and general; *Mr. Sibley*, physical protection of public places and *Mr. Nichols*, disciplinary protection of public places; *Mr. Gray*, public information.

A liaison committee is composed of *Professor Euston*, *Mr. Gray* and *Mr. Bissell*.

"The ultimate aim of the defense committee is to work through the regional and national organization of the American Institute of Architects and make all the talents of the architects of the country available for the total economic and social defense of our nation," Mr. Gray explains. "Whatever may be accomplished elsewhere, we in Connecticut, as guardians of the chief ammunitions center of the nation, have a tremendous job ahead of us and we must make good.

"Already civil defense in Connecticut, through the work of the State Joint Executive Defense Committee has made a considerable advance. This is notably true in the field of public utilities. The engineers of the water companies, for example, have planned precautionary measures against sabotage of all sorts, from the source through the mains to the consumers. Each watershed will have increased patrols and surveillance, and mains from the various sources in between different sections of the city will be so cross-connected that no section of the community can be cut off from a continuous supply—a matter affecting production of every kind as well as the civilian population.

"In a similar manner, light, power, and gas systems are being protected. Wherever feasible each system is being cross-connected from community to community. Similar protective organization is under way in the railway, bus, trolley, and trucking services. The telephone company is organizing a special department for the immediate intercommunication of information. Municipalities are organizing the expansion of hospitals, clinics, and other activities."

DEFENSE WORK IN THE YALE DEPARTMENT OF ARCHITECTURE

AS REPORTED BY C. L. V. MEEKS

Promptly in September when school opened, a program of Defense activities began. This had three aspects:

1. It was recognized that there was a desperate lack of scientific bibliographical work on Defense; thus the necessary foundation for all later work had to be built up almost from scratch.

2. It was important to bring together as much up-to-the-minute information as possible. This has been done through a course *(Architecture 47)* of bi-weekly lectures from distinguished experts, from other schools at Yale and from all over this country and Europe.

3. Direction of research and design to specific aspects of Defense. These have dealt, so far, with Decentralization, Evacuation, Succor, and the Defense of Industrial Plants.

The students volunteered to compile a bibliography. It was found that: existing library files and classifications were inadequate, both here and in New York and Washington; that there was no master list of periodicals on the subject nor were the contents of departmental libraries, such as Chemistry, Physics, and Engineering, at all integrated. Valuable material in medical journals had to be made accessible. A great deal of important material is unavailable due to censorship. The result of this effort to date has been the stimulation in the University of the reclassification of Defense material and the active cooperation of various libraries in acquiring this material. It is now clear, after several months of work, that the financial and physical problems of collating the material is beyond the scope of volunteer student assistance and efforts are being made to gain support for this project on an expanded basis.

In Class A Design, three specific problems have been undertaken. The first was the study of decentralization of modest income groups. Investigation of country areas, means of self-support, collective facilities, marketing, etc., were studied. The second problem was designing an industrial plant. Committees studied various subjects such as construction, bombproof shelters, camouflage. This information was pooled and several solutions were proposed. An airplane trip over the site had been made to study the camouflage problem and due consideration was given to the fact that the plant must be useful in peacetime as well as in wartime. Consequently, only the most vital part of the plant was made bombproof.

The third problem was a Naval Hospital. In this case, it was decided that camouflage was not vital, and that it was more feasible to plan a group of several buildings in shapes which would make poor targets. It was designed to function smoothly under stress of abnormal activities. Again, the most important equipment was placed below ground, the premise being that men are cheaper than machinery.

In Class B Design, a study of the evacuation of workers dwelling near a munitions plant in New Haven was analyzed. It was found that 20,000 people lived within a half mile of it. Groups of small trailer camps was the solution offered: these to be scattered along existing roads within five or six miles of the plant. Trailers had to be redesigned for workers' families to eliminate luxuries and to include necessities. Laundry and bathing facilities would be provided in prefabricated units which could be used again for other purposes in peacetime.

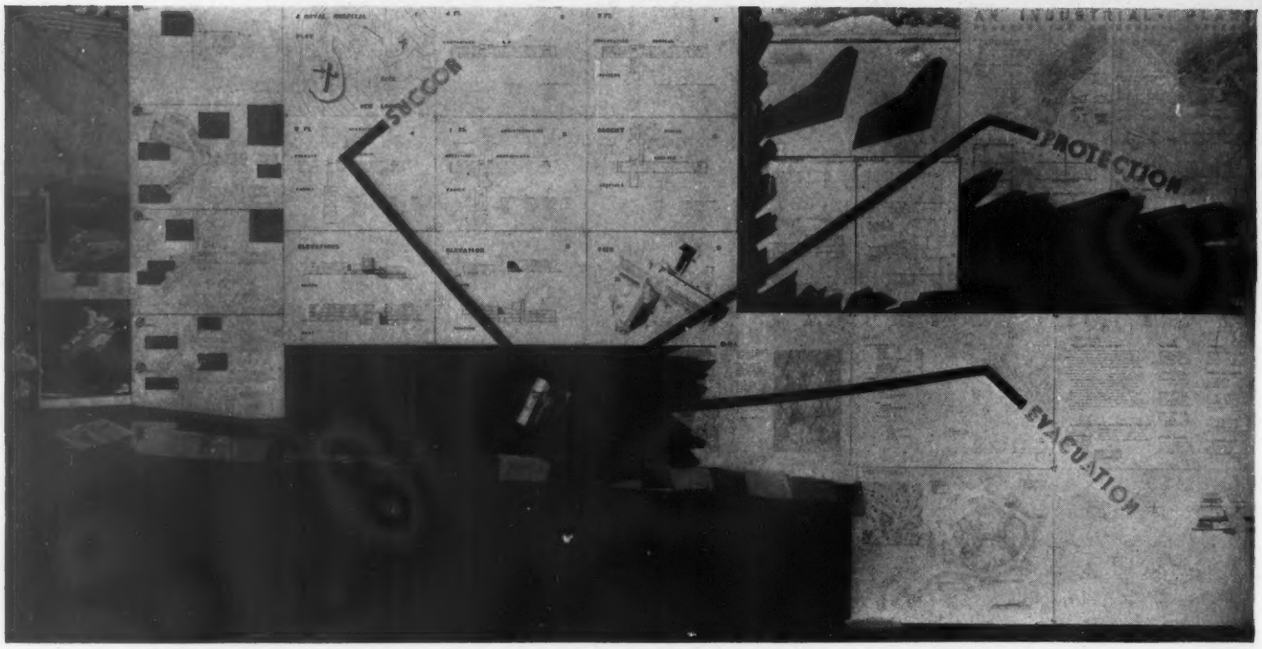
Lectures in *Architecture 47* have been given by Homer St. Gaudens on *Camouflage*, by Hugo van Kuyck on *Designing Cities*. It was pointed out that good planning for war would also improve peacetime living conditions. Max Abramovitz passed on some of the data gained from his experience in Panama in building a naval base. We have also had lectures by Dr. Winslow on *Planning for Health*, by Professor Doob on *Meeting the Psychological and Social Needs of Workers*, by Maurice Rotival on *The Organization of Regional Plans*, by Carl Taeusch on *Effectual Land-Use Planning*, by Dr. Neergaard on the *Planning of Hospitals*, by C. W. Eliot, 2nd, on the *Facilities of the National Planning Board*, and many others.

The subject of planning for Defense has also been under consideration in the regular courses on Architectural Theory, the History of Architecture and Group Planning.

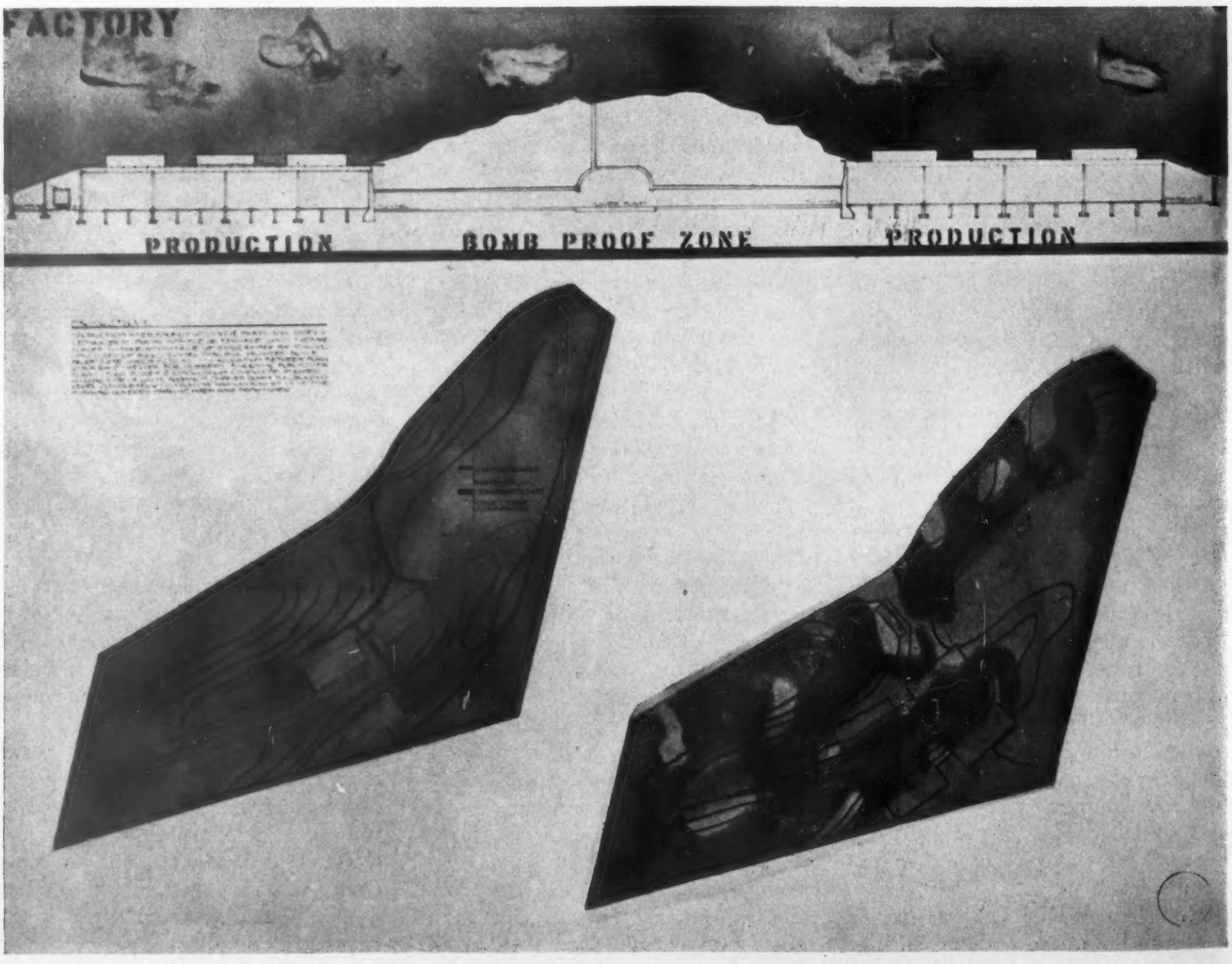
On February 22nd, the Alumni and students of the Department of Architecture held a joint meeting in which they exchanged their experiences in Defense work and research. In connection with this, a dramatic exhibition of Defense problems was arranged together with an exhibition of bibliographical items. A photograph of this exhibition is appended, as well as a copy of a bibliography prepared the students for Alumni distribution.

From all this, it would seem that the students and Faculty at Yale, without special grants or assistance, have been exceedingly active and constructive in meeting the present emergency. With the possibility of additional financial aid, this work can immediately be made of wider usefulness.

Next year we are adding new courses in Theory and modifying the design program to lay even greater stress on preparation for Defense work. The Graduate Group in particular will have unusual facilities for defense research, particularly as it affects town and regional planning.



AT A JOINT MEETING OF ALUMNI AND STUDENTS OF THE DEPARTMENT OF ARCHITECTURE AT YALE, THE DEFENSE ACTIVITIES OF THE SCHOOL WERE DRAMATIZED IN THE EXHIBIT SHOWN ABOVE. PROJECTS FOR A NAVAL HOSPITAL, TRAILER COMMUNITIES, INDUSTRIAL BUILDINGS, AND OTHER PREPAREDNESS ITEMS WERE SHOWN. ONE OF THESE, A PARTLY BOMBPROOF FACTORY DESIGNED BY K. A. GIBBON IS REPRODUCED IN PART BELOW



A SELECTED BIBLIOGRAPHY

of recent Defense publications, pertaining to the Architectural profession.

Compiled by the Department of Architecture—School of the Fine Arts

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For the Yale Alumni in Architecture

GENERAL DEFENSE PLANNING

• Materials needed for defense. *Manufacturers Record*, Aug. '40, 28-9; Sept. '40, 30-1.

• Mobilizing civilian America. A discussion in detail of the War Department's Industrial Mobilization Plan, 1939 edition. Harold J. Tobin and Percy W. Bidwell. Council on Foreign Relations, New York, '40. 276 pp.

• War's effect on building cost. Based on FHLBB survey, local home building costs in 80 cities. *The Architectural Forum*, Dec. '39, 473-5.

• Post-war reconstruction. Rehousing research in Finland. Alvar Aalto. il. Finnish Information Center, New York.

• Regional Surveys. Their aim and importance in war and peace. C. G. La Farge. *The Journal of the A.I.A.*, Aug. '18, 402-4.

• What does military design offer the planning of peace? D. Haskell, bibliog. il. maps. *The Architectural Record*, Mar. '39, 68-75.

• National Defense Commission personnel organization. *Business Week*, Aug. 10, '40, 18-19.

• Millions for Defense. Emergency expenditures for national defense 1933-1940; summary of types of construction under rearmament program, includes buildings, dwellings, hospitals, bridges, etc. il. Federal Works Agency, Washington, 46 pp.

MILITARY AND NAVAL CONSTRUCTION

• Building eighty airports in one year for the British commonwealth air training plan. il. *Canadian Engineer: Roads & Bridges*, July '40, 16-17, 50.

• Cantilever runways carried on central girder quickly moved. il. diags. *Engineering-News-Record*, 7 Nov. '18, 865-6.

• Hangar near Rome, Italy. Provides clear space and bomb resistance. *The Architectural Record*, Nov. '38, 54.

• Camps for peace and war; for holiday use and for billeting evacuated civil population in war time. *Economist*, Feb. 4, 18, '39, 236-7; 334-5.

• Gift to the forces; mobile canteen. il. *Gas Journal*, Dec. 27, '39, 685.

• New welded armory; Morristown, N.J.H.S. Card. il. *Iron Age*, July 13, '39, 101.

• Pneumatic roofs for army huts. *Engineer*, Mar. 29, '40, 321-2.

• Thirteen armory buildings; arch-bent framing, walls and partitions of concrete. S. E. Berkenbilt. il. *Engineering News-Record*, Dec. 1, '38, 706-7.

• Three Indiana armories of architectural concrete. il. *Concrete*, Aug. '37, 11-12.

• Navy's new ship model testing plant. H. C. Fischer. il. diags. *Journal of the American Concrete Institute*, Apr. '39, 317-36.

• Adequate national defense requires modernized army arsenals. C. M. Wesson and others. il. *Machinery*, July '39, 735-65.

INDUSTRIAL

• Industrial mobilization for national defense. C. T. Harris, Jr. *Automotive Industries*, Feb. 11, '39, 156-9.

• Where new defense plants will be built—and why. R. Ginsburgh. il. map. *Factory Management*, Sept. '40, 4206.

• Economical handling methods in war-time production. *Mechanical Handling*, Oct. '39, 291-2; Nov. '39, 317-8.

• Industrial architecture of Albert Kahn, Inc. Special issue of *The Architectural Forum*, Aug. '38. Also in book form by George Nelson. The Architectural Book Publishing Co., Inc., New York, '40, 176 pp.

• Industrial mobilization plan. il. *Business Week*, Oct. 28, '39, 55.

• Methods nouvelles de construction rapide et economique des vastes ouvrages souterrains. A. Pettavel. diags. *Genie Civil*, Nov. 25, '39, 386-9.

• War-time building Bulletin No. 8—factories, plans. *The Builder*, Sept. 13, '40, 266-7.

• War-time building practice: 28. Industrial planning and design. R. Cotterell Butler. il. *The Builder*, Sept. 13, '40, 254-6; Sept. 20, '40, 280-1.

• Windowless factory has conditioned air and controlled industrial exhaust; Simonds Saw and Steel Co. il. plan. *Heating and Ventilating*, Aug. '39, 26-9.

• Manufacture of high-speed tanks. J. K. Christmas. il. *Mechanical Engineering*, Jan. '39, 13-19.

• Manufacture of motor vehicles for war service. il. *Engineering*, Dec. 22, '39, 696-7.

• Mechanical handling in army truck production. il. *Mechanical Handling and Conveying*, Jan. '40, 3-6.

• It's still a chemical war; chemical industry still has rush job in defense program. *Business Week*, July 13, '40, 17-8.

• Manufacturing in army arsenals; illustrations. *Machinery*, Jan. '39, 310-2.

• Mobile railway workshops for use with the British expeditionary force in France. il. diags. plan. *Engineer*, Mar. 29, '40, 313; *Mechanical Handling*, Apr. '40, 86.

• Gas works are now war factories. E. L. Burgin. *Gas Journal*, Feb. 28, '40, 456.

HOUSING

• Defense housing. F. S. Fitzpatrick. *Journal of Land and Public Utility Economics*, Aug. '40, 344-5.

• Housing for defense; a review of the role of housing in relation to America's defense; factual findings by Miles L. Colean; program for action by the Housing Committee of the Twentieth Century Fund. Twentieth Century Fund, New York, '40, 208 pp. il. $1.50.

• Ackerman, Frederick Lee. An appraisal of war housing. (*Pencil Points*, Sept. 1940; vol. 21, no. 9, p. 535-545; with photos, plans.)

• Bergstrom, Edwin. Housing work under the defense program, in The President's message. (In *The Octagon*, July 1940; vol. 12, no. 7, p. 7.)

• Defense Housing. *(Architectural Forum*, Aug. 1940; vol. 73, no. 2, p. 2.)

• Defense Housing plans. *(Public Housing*, Sept. 24, 1940; vol. 2, no. 13, p. 3, with illus., plans.)

• Federal Housing of war industry workers, 1917-1918. *(Monthly Labor Review*, July 1940; vol. 51, no. 1, p. 5-12; with table.)

• Housing for Defense. Twentieth Century Fund—1940.

• Housing Shortage endangers defense program. *(American City*, Aug. 1940; vol. 55, no. 8, p. 97.)

• U. S. Housing Authority defense housing called for permanent construction. With little added cost and time structures can be built to last 20 years and so be suitable for subsidized housing after emergency. *(Engineering News-Record*, July 11, 1940; vol. 125, no. 2, p. 1.)

AIR RAID PROTECTION

• Defending the Pacific coast; how utility communications fit into a warning service. L. H. Stanford. il. map. *Electrical West*, June '39, 53-6.

• Portable power distribution center. E. N. Banthin. il. *Engineering News-Record*, Feb. 29, '40, 337.

• Rectifier plant in war-time; glass bulb rectifiers inside a brick or concrete sub-station. G. M. C. Peacock. *Electrician*, Aug. 16, '40, 87; *Engineer*, Aug. 16, '40, 104.

• Reserve supply of aviation gas will be stored underground. H. D. Ralph. *Oil & Gas Journal*, Aug. 29, '40, 17.

• Air raid precautions; an engineering problem. W. J. Quentin. diags. plan. *Civil Engineering*, Oct. '39, 597-600.

• Air raid precautions and water supply; abstract, J. M. Bonham-Carter and A. J. G. Bird. *Engineering*, Nov. 25, '38, 625.

• A.R.P. News. Publication devoted to all phases of civil defense. Walter Hills' Publications Ltd., London.

• A.R.P. in town planning. From a paper. W. Braxton Sinclair. *Architect and Building News*, Nov. 17, '39, 159.

• Défense passive. Le danger aérien. Textes législatifs. Technique de la défense passive. L'urbanisme et la défense passive. plans. il. diagrams, details. *L'Architecture d'Aujourd'hui*, Dec. 1937, 2-33.

• Défense passive. Etaient de caves (shelter construction). il. details. *L'Architecture d'Aujourd'hui*, Sept.-Oct. 1939, 60-67.

• Principles of design for air raid shelter. From a lecture. B. Lubetkin. *Architect and Building News*, Nov. 17, '39, 160.

• Resistance to collapse of structures under air attack. *The Builder*, Feb. 2, '40, 162.

• Structural air raid precautions; existing buildings. *Journal of the Royal Institute of British Architects*, May 8, '39, 661-71; May 22, '39, 730-2.

• Air raid shelters. G. Schindler. *Schweiz Bauzeitung*, '37, 110 (7), 69-70.

• Air raid shelters. Report of the Lord Privy Seal's conference. H. M. Stationery Office, London, 6d.

• Bomb resisting shelters. British Government. The British Library of Information, New York.

• Annales d'Hygiene. Hygiene of Air Raid Shelters. F. Prunet 18:48-52, Feb. '40.

• Car park and air raid shelter in Kingston-on-Thames. plans. *The Builder*, Apr. 12, '40, 449-51.

• Concrete shelter for 50 persons; brick shelter for 50 persons. plans. details. *The Builder*, April 12, '40, 452-3.

• Domestic surface shelters. British Government. The British Library of Information, New York.

• Planned A.R.P. Tecton architects. The Architectural Press, London.

• Steel shelters. British Government. The British Library of Information, New York.

• A.R.P. at power stations. E. McCarthy. *Electric Review*, Apr. 14, '39, 530.

• Air raid precautions for record offices, libraries and museums. H. Meyer. *Library Association Record*, May '38, 204-9.

• Air raid precautions in factories and business premises. British Government. The British Library of Information, New York.

• Air raid precautions in hospitals. *Engineering*, Jan. 20, '39, 76.

• Factory shelter partly or wholly beneath ground for 50 persons. il. details. *The Builder*, Sept. 8, '39, 393.

• Black-out and day-time conditions; war-time factory lighting during daylight working. il. *Electrician*, Aug. 30, '40, 110.

• Glass for A.R.P. purposes. *Engineering*, Dec. 1, '39, 618.

CAMOUFLAGE

• Adaptive colouration in animals. For those ambitious (and mostly unemployed) potential architect camoufleurs; adaptive colouration in animals is the basis of all human efforts at camouflage. Hugh B. Cott. it. Methuen, London, '39.

• Camouflage service in the A.E.F. Maj. Homer Saint-Gaudens. *The Military Engineer*, May-June, '25.

• Review of camouflage literature. Lt. Col. W. P. T. Hill. Comprehensive bibliography regarding all phases of camouflage with reviews of selected volumes. *The Marine Corps Gazette*, part I, Nov. '39, 22-72; part II, Mar. '40, 40-8.

• Camouflage of seacoast fortifications. Lt. Col. Homer Saint-Gaudens. *The Military Engineer*, Sept.-Oct. '31.

• Camouflage of large installations. Air raid precautions handbook No. 11. H. M. Stationery Office, London.

DEFENSE BIBLIOGRAPHIES

• Administration and organization in wartime in the U. S. Dorothy Campbell Culver, Public Administration Service, Chicago.

• Civil-Military Relations. Pendleton Herring. Social Service Research Council, N. Y.

• Defense Bibliography. *Architectural Forum*, Nov. '40.

• Defense Housing. Harvard Univ. Depts. of Landscape, Architecture and Regional Planning, Oct. '40.

• Department of Scientific and Industrial Research. His Majesty's Stationery Shop, London S. '39.

• American National Defense Bibliography, Library of Congress, 1939.

• American National Defense Bibliography, Library of Congress, 1940.

• Bibliography on National Defense and American Foreign Policy. International Relations 103, 1940-41.

• Bibliography of terms and articles on Camouflage. Maj. Homer St. Gaudens.

• Recent Literature on Hospitals. Alan Mather. *Pencil Points*, Nov. '40.

• Recent Literature on Airports. Alan Mather. *Pencil Points*, Oct. '40.